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Gender Differences in Educational Outcomes:

Study on the Measures Taken and the Current Situation in Europe

European Commission

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Education, Audiovisual and Culture Executive Agency
P9 Eurydice
Avenue du Bourget 1 (BOU2)
B-1140 Brussels
Tel. +32 2 299 50 58
Fax +32 2 292 19 71
E-mail: eacea-eurydice@ec.europa.eu
Website: http://www.eurydice.org

PREFACE

I am very pleased to present this Eurydice study addressing the crucial issue of gender and educational outcome. Gender equality has long been a major goal at European level. Since the 1970s, various directives have laid the foundation of equal treatment and equal opportunities in Europe. However, despite the existence of comprehensive legislative frameworks, gender equality is yet to be achieved. Although women form the majority of students and university graduates in most countries, they still earn less and have lower employment rates than men. With regard to education and training, gender differences persist in both attainment and choice of courses of study.

The nature of gender inequalities in education has changed profoundly over recent decades and, with regard to attainment in particular, has become more complex. Apart from the injustice inherent in all gender stereotyping, gender differences in education can also negatively affect economic growth and social inclusion. For example, women remain a minority in the fields of maths, science and technology, but on the other hand evidence shows that boys are more likely to be amongst the poorest performers in reading ability. These two examples illustrate that gender differences in education must be taken into account when developing policies and strategies to improve educational outcomes.

In March this year, the European Commission launched "Europe 2020", a strategy for smart, sustainable and inclusive growth. Education and training are a fundamental and integral part of this strategy. Indeed, two of the five headline targets in Europe 2020 are related to education, namely that by 2020 the share of early school leavers should be under 10 % and that 40 % of the younger generation should have a tertiary degree or equivalent diploma.

EU Education Ministers have already agreed other targets, for example related to early childhood education, low achievers in basic skills and adult participation in lifelong learning. If goals such as these are to be achieved, then effective policies, based on clear evidence, must be implemented. This Eurydice report illustrates existing gender inequalities in education and gives a comprehensive overview of national policies that address them. Addressing these inequalities effectively requires a solid evidence base and is facilitated by mutual learning and exchange of good practices between countries. I believe that this study provides a valuable overview of policies tackling gender inequalities in education and that it will be of major interest to policy-makers.

Androulla Vassiliou
Commissioner responsible for
Education, Culture, Multilingualism and Youth

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INTRODUCTION

This study is a contribution to the debate on gender in education from the Eurydice Network, as requested by the Swedish Presidency of the Council of the European Union for the second half of 2009. The initial idea was to examine to what extent and in what ways gender inequality in educational attainment was an issue of concern in European countries. Although the situation has changed radically in the last decades regarding participation rates in education, gender differences persist in both attainment and choice of courses of study. The study therefore examines whether such disparities have led to policy initiatives such as proposals for changes in laws and other regulations relating to education, national surveys, projects or any other kind of official measures focusing on gender. The study also attempts to provide a mapping of the policies and strategies in place across Europe to tackle gender inequalities in education systems today.

Scope

The study contains a review of the research literature on gender and education and summarises the main findings from international performance surveys on gender differences in education. It provides secondary analyses of PISA data mostly focusing on the variation of achievement by gender. The comparative overview of policies and measures in place in European countries with respect to gender equality in education forms the main part of the report. The study discusses legislative and policy frameworks for gender equality in education, distinguishing the main gender equality concerns. Specific examples are given to illustrate the extent to which European countries have been implementing concrete policy measures that target gender inequalities in education.

The present study takes the **reference year 2008/09** and covers all Eurydice Network countries with the exception of the German-speaking Community of Belgium, Bulgaria and Turkey. Information on these countries/region could however be provided for PISA (Programme for International Student Assessment) and Eurostat data. All changes and reforms planned for the coming years have also been taken into account where relevant.

All ISCED levels are covered, but the great majority of the report is devoted to school level rather than higher education.

With respect to sources, official documents from central education authorities are the initial sources used. However, in countries where such official documents do not exist, agreements, including those which are private but recognized and accepted by public education authorities, have been used. The study also contains information on smaller-scale projects if they have been considered relevant for the purpose of this study. Apart from official sources, the results of national surveys and national statistics have equally been used where available.

Only **public-sector** schools and higher education institutions are considered, except in the case of Belgium, Ireland and the Netherlands, where the grant-aided private school sector is also considered, as it accounts for the majority of school enrolments (in the Netherlands, the Constitution provides for equivalent treatment and financing of the two sectors).

Structure

Chapter 1 draws on debates and research in the field of gender and education as well as studies of the extent and causes of gender difference in education across Europe. Shifts in ideas are considered as well as those in policy and practice. It argues that there has been a shift from gender and education as an area of policy largely concerned with righting the wrongs against girls and women to one which is influenced by cross-cultural studies of examination performance and boys' so-called educational under-achievement. It also shows that most countries in Europe have engaged with feminism to some extent, with a variety of implications for educational policy and practice. The chapter includes a sub-section on gender as an issue of EU policies.

Chapter 2 explores the gender patterns in achievement by subject (reading, mathematics and science). It discusses the 'gender gaps' in terms of boys outperforming girls and girls outperforming boys in these subjects referring to relevant international surveys, such as 'Progress in International Reading Literacy Study' (PIRLS), the 'Programme for International Student Assessment' (PISA) and 'Trends in International Mathematics and Science Study' (TIMSS).

Chapter 3 outlines existing national legislative and policy frameworks for gender equality in education. It shows how gender equality is defined in relation to education in different legislative frameworks, then turns to gender equality policies in primary and secondary education, categorising existing policy priorities. Finally, the chapter also highlights examples of the implementation of a gender mainstreaming strategy.

Chapter 4 deals with diverse aspects of school organisation with respect to the gender perspective. It aims to reveal to what extent gender issues are included in official curricula and asks whether sex education and personal relationships education form part of the curriculum. It also explores whether any forms of gender-related guidance exist in European countries. The issue of the gender perspective in the production and evaluation of school books and teaching materials is considered and, finally, the chapter shows how European countries approach gender issues in relation to school climate and the inclusion of parents in the promotion of gender equality.

Chapter 5 complements the international survey findings presented in Chapter 2 with national test results and includes statistical data on the numbers of pupils repeating years at school and those dropping out of education. The chapter also contains current policy responses to gender gaps in attainment.

Chapter 6 discusses the issue of co-education versus single-sex education and shows where public single-sex settings (whole school or classes) exist and discusses whether any respective policies regarding these two forms of school organisation are in place.

Chapter 7 presents some critical issues with respect to staff in education. It looks at statistical data which show to what extent teaching is a female occupation which contrasts with the relative absence of women in management positions in schools. It discusses campaigns and initiatives at national level aiming at attracting more men into the teaching profession and examines how far gender is included as a topic in initial teacher education and continuing professional development for education staff.

Chapter 8 discusses gender equality concerns and policies regarding higher education. It raises the issues of varying proportions of men and women in different fields of study as well as the relatively lower percentages of doctorates among women and the under-representation of females among professors and academic staff in universities. Policies and projects targeting these gender imbalances are presented.

Methodology

The Eurydice Unit within the Education, Audiovisual and Culture Executive Agency developed a guide to content together with an academic expert, Gaby Weiner (Centre of Educational Sociology, University of Edinburgh, United Kingdom) and in close consultation with the Swedish Eurydice Unit as well as experts from the Swedish Ministry of Education. The comparative analysis is based on responses to this guide from Eurydice National Units. The report has been checked by all National Units participating in the study ([1]). All contributors are acknowledged at the end of the document.

Specific examples of national information are presented in an altered text style in order to set them apart from the main text. These cases provide concrete examples of general statements made in the comparative study. They may also illustrate exceptions to what is seen as a general trend in a number of countries, or provide specific details supplementing a common development.

([1]) Ireland has not checked chapters 3 to 8.

EXECUTIVE SUMMARY

Research on gender and education points to the significance of gender stereotyping

- Sex differences research shows us that it is difficult to separate innate from learned behaviours, or to understand to what extent stereotyping influences individuals' perceptions and behavioural or cognitive sex differences. Research shows that, in general, the range of differences is small compared to the similarities existing between the sexes.
- Gender-related results from cross-national surveys on performance are able to provide indicators of how a national education policy is working in terms of equity in comparison with others, but usually are not able to provide an analysis of particular causal factors, or what should or could be done to create a more equal gender system.
- Teachers' perceptions of male- and femaleness are crucial for their relations with pupils and can be an important factor in generating gender equity in schools. Gender stereotypes are also likely to be reinforced or weakened by text books and reading material provided in schools.

Gender is only one of the factors that affect achievement

- The most pronounced gender difference in achievement is the advantage of girls in reading. On average, girls read more and enjoy reading more than boys. Girls' advantage is consistent across countries, different age groups, survey periods, and study programmes.
- In mathematics, boys and girls have similar results at the fourth and eighth school years in most countries. Boys' advantage emerges in the later school years and is especially noticeable among students who attend the same teaching programmes and year groups.
- Gender differences in science achievement are the smallest. Despite performing equally well as boys in most countries, girls tend to have a weaker self-concept in science than males, i.e., on average, girls had lower levels of belief in their science abilities than boys. Yet, both boys and girls are similarly interested in science; and there is no overall difference in boys' and girls' inclination to use science in future studies or jobs. Reading, however, is considered important by far more girls than boys in all European countries.
- Boys are more likely to be amongst the poorest performers in reading. In mathematics and science, there are no gender differences amongst low achievers in most countries. In mathematics, girls are more likely to perform at lower levels in approximately one third European education systems.
- Gender is only one of the factors that affect achievement in various subject fields. Socio-economic status is a very strong factor; thus it is important to consider family background alongside gender when supporting children who are under-achieving.

Gender inequality is a concern in many countries, but overall policies are often missing

- Most European countries are concerned about gender inequalities in education. However, the comprehensiveness of legislative and policy frameworks differs widely. On the one hand, they differ concerning the degree to which gender equality concepts are embedded in various legislative acts. On the other hand, they can frame gender equality in different ways, focusing on one or more of the various concepts that are associated with this term (equal treatment, equal opportunities, equality of outcomes).
- The most common goal of gender equality policies in education is to challenge traditional gender roles and stereotypes. In connection with this main aim, countries may focus on combating gender-based harassment and violence, enhancing the representation of women in decision-making bodies or counteracting gender-based attainment patterns. Policy frameworks range from no policy action to a broad definition of problems.
- While countries have implemented various different policy instruments, more general strategies are often lacking. More specifically, although the goal of providing equal opportunities for women and men exists almost everywhere, only a few countries have identified explicitly the aim of reaching the equality of outcomes or have implemented successfully the gender mainstreaming strategy in the field of education. Although the list of potential policy measures that aim at changing traditional gender roles and stereotypes is long, only a few countries have put all of them into action.

Curriculum, guidance and school climate to counteract gender stereotyping

- It seems that efforts are made to include gender and gender equality as a topic or an inter-disciplinary theme in school curricula of European countries. The same is not true for developing adequate gender-specific teaching methods and guidelines. However, these could play an important role in counteracting gender stereotypes with regard to interest and learning.
- With respect to sex education and personal relationships education, some countries report that a relatively high degree of freedom to choose materials and methods and the absence of good national support material contribute to the fact that these topics continue to be taught in a rather inefficient way. The non-compulsory character of many subjects which deal with certain aspects of sex education and personal relationships education may also play a part in this respect.
- Combating gender stereotyping in career choice and supporting young people at school with systematic gender-sensitive guidance for further study and careers is a domain where many interesting individual initiatives and projects exist in numerous European countries. Most of them are, however, lacking an overall national strategy. There also seems to be a shortage of initiatives specifically targeted at boys.
- Where policies regarding the hidden curriculum and school climate exist, they mostly have the goal of combating gender-based violence and harassment in schools. Nevertheless, only a small number of countries have this aim as an overarching priority and most countries rely on more sporadic or more specific initiatives.

- Despite the important role of parents, government projects and initiatives that aim to inform them about gender equality issues are rare, and there is even less attention paid to involving parents more closely in promoting gender equality in education.

Policies tackling gender gaps in attainment mostly focus on boys' underachievement

- The earliest differences between boys and girls in attainment are revealed through falling behind in school and repetition of school years, which are more common among boys.
- Boys pre-dominate among early school leavers, while more girls receive an upper secondary school diploma. Girls usually obtain higher grades and higher pass rates in school leaving examinations, which, in turn, helps them to enter desired university programmes. However, disadvantaged groups with low attainment do exist among boys and girls.
- Most countries mention these groups as a particular concern regarding attainment, often emphasizing gaps between pupils with differing socio-economic status, from ethnic minorities or specific living areas (rural/urban). Although there are distinct gender patterns, a particular attention to girls or boys within those groups is not very common.
- The most common policies tackling gender gaps in attainment concern boys' under-achievement. Only in some countries have special programmes been developed for improving boys' reading skills and girls' achievement in mathematics and science.

Single-sex settings not widespread in public schools

- The introduction of co-education in the public school system has been considered in many countries as a step towards equality, achieved only less than fifty years ago. The re-introduction of single-sex settings does therefore not seem to be a very attractive option in European countries. Moreover, research results on the positive effects of the separation of the sexes are inconclusive. Cost-effectiveness may also play a certain part in this respect insofar as providing separate schools cannot be considered an economically-viable option.

Teaching is a very female occupation at lower levels of education

- Teaching in European countries is a very female occupation, in particular at the lower levels of education. Although this is considered a concern in many countries, strategies to attract more men into teaching at compulsory school level are sporadic.
- Education management, however, is left to a large extent to men and there seems to be a clear lack of national initiatives to encourage a more balanced situation in terms of gender.
- Policies on teacher education do not particularly take into account the gender perspective either in its initial provision or in activities within the framework of continuing professional development for teachers or school heads. Training in gender matters largely depends on the initiative of individual teacher education and training providers.

Gender equality policies in higher education mostly focus on horizontal segregation

- Most countries with gender equality policies in higher education have the primary goal of counteracting horizontal segregation and the different choices of courses of study between women and men. Almost all of these policies and projects target only girls or women. Only a minority of programmes focus on the study choices of boys or men.
- The proportion of women among teaching staff in higher education institutions declines with every step on the academic career ladder. Although this can partly be explained by the fact that large groups of women entered universities and chose academic careers only relatively recently, this 'glass ceiling' for women is partly a result of the dominant masculine culture that exists generally in academia. Nevertheless, only a few countries are concerned about this phenomenon, and even fewer countries have implemented concrete policy actions to target vertical segregation.

CHAPTER 1: GENDER AND EDUCATION IN EUROPE: A LITERATURE OVERVIEW

Gaby Weiner, Centre of Educational Sociology, University of Edinburgh

This overview presents debates and research results concerning the extent and causes of sex differences in education, mainly covering the years of compulsory schooling. It addresses key issues in what is rapidly becoming a large literature on an expanding field, and attempts to explore shifts in ideas as well as policy and practice. The overview is divided into eight sections.

Section 1 identifies two opposing perspectives on gender: 'conservatives' see gender as fixed and biologically determined whereas 'progressives' view gender as principally an outcome of historical and cultural influences.

Section 2 explores the influence of feminism on gender change, in particular, the three main feminist 'waves' and developments within Europe.

Section 3 considers the changing nature of conceptions of equality in education and how they relate to gender.

Section 4 focuses on the strengths and weaknesses of sex differences research which focuses primarily on cognitive and behavioural aspects.

Section 5 considers various cross-national studies on differences in academic performance between girls and boys and what these can tell us about the relationship between gender and cross national factors.

Section 6 explores how social factors, including gender, interweave and interact with each other to impact on educational performance in different ways.

Sections 7 examines how gender has developed in the practice of education, and

Section 8 provides a short conclusion for this chapter.

1.1. Opposing perspectives on gender and sex differences

Many researchers have sought to identify and differentiate the meanings of 'sex' and 'gender' in order to understand the impact of biology and other factors on human behaviour. This is exemplified by the two attempts at definition below.

> [The term **Sex** refers to] the biological and physiological characteristics that define men and women (WHO, 2009).
>
> The term **gender** refers to the economic, social, political and cultural attributes and opportunities, associated with being male and female. In most societies, men and women differ in the activities they undertake, in access to and control of resources, and in participation in decision-making. And in most societies, women as a group have less access than men to resources, opportunities and decision-making (Desprez-Bouanchaud et al. 1987, p. 20-21).

Historically, there have been two main approaches to educational gender or sex differences in western cultures. The first is conservative in the sense that social and cultural difference between men and women is seen as biological, natural and therefore unchanging. In many cultures and at many periods in history, this perspective went unchallenged, underpinned by a large literature focusing on women's inferiority. For example, in nineteenth-century Britain, males and females were expected to take up separate roles in society: men were associated with the public sphere and women with the private (Vicinus, 1972). So-called scientific studies were published that 'proved' that if women entered universities, their reproductive capabilities would be harmed (Delamont & Duffin, 1978). A twentieth-century development of this perspective is that differences in behaviour between the sexes stem from innate biological differences between girls and boys. Accordingly, men are physically stronger, less resilient, have greater spatial, numerical and mechanical abilities and tend to see the world in terms of objects, ideas and theories. Women on the other hand mature physically and psychologically at an earlier stage, are more affiliative and nurturing, have higher and more precocious verbal skills and see the world in personal, aesthetic and moral terms. In an influential book *Males and Females* Hutt asserted, for example, that women and men are intrinsically different and that, therefore, these characteristics are not susceptible to change (Hutt, 1972). From this conservative perspective on sex differences, education is seen as a means of socialising and educating boys and girls into their 'natural' roles as men (breadwinner, work-oriented, head of the family) and women (nurturer, carer, family-oriented).

The second, progressive approach, perceives men and women's social roles as shaped largely by influences arising out of history, culture and society, and thus constantly in the process of change as society itself changes. From this point of view, women have occupied different (and usually subordinate) positions historically because Western and other societies are patriarchal, that is that men have power over women and therefore are in a position to interpret so-called biological differences in stereotyped ways (De Beauvoir, 1953; Harding, 1986; Riley, 1988; Scott, 1988; Hill-Collins, 1990).The emphasis of this perspective is to understand gender or sex difference as a cultural phenomenon, arising out of the dominant ideas of a particular era or culture. Education is here regarded as an instrument for creating awareness of why particular sex differences are seen as important at particular times and for encouraging greater equality between the sexes, as well as for challenging dualistic and stereotyped assumptions.

1.2. Role of feminism

1.2.1. Feminist 'waves'

Western feminists in particular have been interested in shaping a progressive position on gender issues in education. Feminism here is defined as the commitment to the political, social, and economic equality of women, which draws on and has instigated a variety of movements, theories, philosophies and campaigns.

Conventionally we have come to understand Western feminist history in three stages or waves. Nineteenth- and early twentieth-century first-wave feminism concentrated on opening up access of woman as a category to political, economic and social aspects of public life from which they had been hitherto excluded. The fight was mainly though not exclusively a bourgeois one, although it led in a

number of countries to important gains for other groups, for example, in terms of voting rights and access to welfare and education (schools and universities).

Second-wave feminism which emerged in Western countries in the 1960s and 1970s, and elsewhere later, continued the struggle to extend access and benefits but also fought for a broader agenda that concentrated on factors specifically affecting women: for example, reproduction, sexuality, domestic labour, violence in the home and paid working conditions. For education, it was argued, there were three distinctive elements with feminism: political, critical and practice-oriented. The **political** involved the movement to improve the conditions and life-chances for girls and women; the **critical** referred to the sustained, intellectual critique of dominant (male) forms of knowing and doing; and the **practice-oriented** concerned the development of more ethical forms of professional and personal practice (Weiner, 1994). Feminists drew on the three elements to identify, in particular, the differential achievement of girls and boys (particularly in the 'power' subjects of mathematics and science), the sex-stereotyped subject and careers' choices made by girls and boys and different 'equality' pedagogies that might be used. However consensus on what it means to be a 'girl' and 'woman' was difficult to achieve as it became clear that other social factors such as social class and ethnicity also had a fundamental (and often decisive) impact on the life experiences and chances of women.

Third-wave feminism emerged from the 1990s onwards, drawing in a new generation of gender scholars (mainly women but also some men) who, having benefited from the efforts of their mothers and grandmothers, now identified their own viewpoints and struggles. It claimed primarily to be the feminism of a new generation 'that responds to the political, economic, technological and cultural circumstances that are unique to the current era' (Kinser 2004, p. 124). There was a rejection of earlier conceptions of feminism as embodying a more or less coherent set of values and ideas, in favour of a more emphasis on agency, in acknowledgment that women can act autonomously and politically despite often crippling social sanctions (McNay, 2000).

Individual sexuality was also a concept that received considerable attention. Weeks (2000), for example, rejects the idea that that there is a true essence of sex; rather that sexual identity like gender is historically and socially shaped. Thus, it is deemed simplistic to reduce what is often a complex pattern of sexual relations, to mere biology. It is argued that the study of the history of sexuality is particularly important in order to understand the range of possible sexual identities available to young people, whether based on class, ethnicity, gender or sexual preference or a combination of these.

Third-wave feminism seemed more attached to theory and the academy than previous waves. This is primarily due to greater access to university education (and teaching) for Western women, the relatively safe and privileged space of the university which makes theorising possible, and the presence of a (female) student audience interested in new ideas and theories. In terms of education, this meant that there was less interest shown in the differential achievements and attitudes of girls and boys and the roles given to them by society, and more in the ways in which pupils, students and teachers actively engage in shaping their own gender 'performances' and masculinities and femininities in relation to each other (Butler, 1990). In other words, instead of looking at macro-policies, scholars of this wave focused on the diversity of particular micro-perspectives and the contextual embeddedness of gender in power relations (Miroiu, 2003). In this respect, Skelton and Francis (2009) argue that third wave theorising does not prioritise the necessity for macro-level change and, therefore, seems to be less useful for educational policy-makers and practitioners. Others

claim that the 'gender perspective' which came out of third wave thinking contributed to the development of the strategy of gender mainstreaming (Booth and Bennett, 2002; see also section 3).

1.2.2. European feminist movements

European feminism provides a good example of the situated specificity of feminism in terms of geography, history and culture. Second-wave feminism emerged in Europe in the post-World War II settlement and its concretisation and expansion in the European Union (EU). Kaplan (1992) notes that when feminists regrouped after the war, picking up the threads of previous feminist activity was more difficult for those in countries which had been closely associated with fascist regimes and ideologies such as Germany and Italy, than for those with a less fractured history of democratic development such as the United Kingdom, USA and Sweden. Moreover, different national histories generated distinctive preoccupations. For example, Italian feminists were particularly hostile to feminist calls for separatism because under fascism, women were 'allowed' a separate if narrow and confined space in public life.

Feminist movements were generally associated in Europe with politically progressive ideas, in particular arising from the student political movements of the 1960s. Yet feminists swiftly created their own spaces signalling 'an interest in a cause which was to take them far from the socialist mainstream into new modes of thought and action' (Lovenduski 1986, p. 72). Although many national feminist movements were influenced by North American feminism, stronger and weaker forms emerged, due to specific cultures and politics of the countries in which they were located.

Meanwhile, in countries within the Eastern European communist bloc (until 1989), there was little evidence of autonomous feminist movements. The political party structure which controlled avenues to political power and which set the conditions in which political activism could take place discouraged such a possibility. Thus while sex-equality was a founding principle in communist states with women having access to education and paid employment, women were not as prominent or influential in the public sphere as might have been expected (Lovenduski, 1986). After 1989, the conditions for feminism and women changed dramatically, providing opportunities for women's greater political engagement but differing also according to national context and values (Corrin, 1999). Significantly, the rhetorical commitment of communist regimes to gender equality, though perhaps not realised in actuality, arguably provided a fertile ideological context for gender change in the post-communist era as have been the conditionality requirements required for entry into the EU. Thus, studies are now emerging in these countries making recommendations for gender change as well as offering a critique of education reform efforts post-1989 for ignoring gender as an issue (e.g. Magno & Silova, 2007).

1.2.3. Gender in EU legislation

European feminism as a whole gradually shifted towards international networks and in particular to investigating what benefits the new Europe might bring. The EU itself legitimated gender action: for example, Article 119 of the Treaty of Rome (1957) laid down that there must be equal pay and benefits for men and women in employment; the 1975 Equal Pay Directive incorporated the concept of equal pay for equal value; and the 1976 Equal Treatment Directive extended equal treatment into many employment areas including training and working conditions. Directives in 1986 laid down equal treatment in occupational pension schemes and for male and female self-employed and also created

regulations for the protection of self-employed mothers. The 1990s saw directives for the protection of health at work of pregnant women and recent mothers, and regarding the burden of proof in cases of sex discrimination, with the Social Chapter agreed at Maastricht in 1992 further developing 'the core idea of article 119' (Walby 1999, p. 131). Since 2000, directives – most notably the Employment Framework Directive (2000/78/EC) and Directive 2002/73/EC amending the 1976 Equal Treatment Directive – have been passed extending the principle of equal opportunities and equal treatment in employment (European Commission, 2007a). Taken together, it is argued, the directives provide 'a solid and comprehensive basis to ensure that the principle of non-discrimination is respected'. It is also intended that such legislation will enable individuals to take their cases to national courts (European Commission 2007a, p.1).

However, the impact of EU law has varied between member states depending, among other things, on the form of conventional gender relations in existence and the strength of organised feminism. As Walby notes,

> [t]he impact of the law is varied between member states, depending on the nature of the pre-existing gender regime, the extent to which the law is utilised, on the mobilisation and power of feminist lobbies both within and outside the labour movement and the impact of other dimensions of the EU such as the fiscal regime (Walby 1999, p. 132).

Walby compares Ireland to Denmark. Irish entry into the EU forced the removal of the ban on married women working in the civil service, thus reducing significantly the large gap between Irish men and women's wages. In the case of Denmark however, EU policies led to the widening of a smaller wage-gap between men and women, due to the ability of the European Union as a 'regulatory state' to enforce free market practices on Denmark on entry into the Union.

The overall situation of women and men in the EU is described as follows:

- The employment rate of women increases but remains lower than men's, although women represent a majority of students and university graduates.
- Women continue to earn on average 17.4 % less than men for every hour worked and this figure remains stable.
- Women are still very under-represented in economic and political decision-making positions, although their share has increased over the last decade.
- The division of family responsibilities is still very unequal between women and men.
- The risk of poverty is higher for women than for men.
- Women are the main victims of gender-based violence and women and girls are more vulnerable to trafficking of human beings (European Commission, 2009a).

1.3. Gender and conceptions of equality in relation to education

Concepts of equality and equal opportunities, and how they can be interpreted, have also developed historically and culturally. Equality as an educational aim is largely a twentieth-century phenomenon. Before then, education was seen as a means of preparing different groups for their station in life (as leaders, bureaucrats, workers and mothers). Wood (1987) argues that in the twentieth century, four main interpretations of the concept of equal opportunities emerged:

- Equal life chances
- Open competition for scarce opportunities
- Equal cultivation of different capacities
- Independence of educational attainment from social origins.

According to Wood, viewing education as the main instrument in producing **equal life chances** is unwise because that would require the precondition that outside-school influences must also be equalised such as family income and cultural expectations. In a society where girls and women are viewed as unequal to boys and men, there is little possibility for schools to compensate and so equalise girls' life chances. **Open competition for scarce opportunities** privileges those who start out with benefits (e.g. high family income, cultural affinity with the school). Being a girl might be seen as one of these benefits, since girls do better in many aspects of schooling. However, gender is not the only factor and, as we shall see in the next section, it is less influential than parents' educational level or family income (Sammons, 1995).

Seeking to provide **equal cultivation of different capacities** provided the rationale for the United Kingdom 11+ selection system in the mid-twentieth century, where on the basis of test results, students were allocated to grammar, central/technical or secondary modern schools (or in Scotland, junior or senior secondary schools). It was argued that this system enabled students to profit most from the type of school to which they were best suited intellectually, but in effect, selective schools had different status and therefore differential ability to guarantee good life chances for (most of) their pupils. Equality of opportunity as a means of **separating educational attainment from social origins**, is Woods' preferred option but also difficult to achieve. One strategy mentioned by Dore (1976) is to make inequality so visible that the introduction of a compensatory measure is seen as imperative – and indeed this was the basis of much equal opportunities policy in western countries from the 1970s onwards regarding social class. However 'how do we cultivate something that is yet to be, let alone cultivate it equally across all persons?' (Wood 1987, p. 6). For example, in the case of the 11+ examination in Britain, potential was prioritised over achievement. Thus although boys did less well in tests, equal numbers of boys and girls were allocated to selective schools because boys were perceived to have more potential for the future (educationally, economically and socially) than girls.

A second perspective on equality of opportunity adopts a three-fold categorisation: formal opportunities, actual opportunities and outcomes (Halsey et al., 1980). **Formal opportunities** refers to the structural availability of access to and participation in education; i.e. that all students have an equal right to access and participation. **Actual opportunities** are dependent on formal opportunities but also on other factors e.g. family background, orientation of school or quality of teaching. **Educational outcomes** is seen as the best means of assessing actual opportunities i.e. those available and taken

up. It is relatively easy, Halsey et al. argue, to judge the relative merits of group and individual fairness at a philosophical level. However, the problem lies in any system's ability to guarantee equality between groups.

A third (and most recent) perspective on gender equality emphasises three main pillars (Booth & Bennett, 2002). First, **equal treatment** focuses on non-discriminatory practices, though ensures neither a shared starting point nor equal outcomes. Second, **positive action** involves initiatives and developments aimed at addressing disadvantages experienced by women, which will enable them to catch up with men. Finally, **gender sensitive policy analysis** or 'gender mainstreaming' refers to the consciously systematic attempt to embed gender equality in institutional governance and culture (Newbigging, 2002). The strategy of **gender mainstreaming** is strongly promoted by the European Union. It is interpreted by the EU as ranging from removing restrictions from efforts to promote equality to the implementation of specific measures to help women (and men). It includes:

> mobilising all general policies and measures specifically for the purpose of achieving equality by actively and openly taking into account at the planning stage their possible effects on the respective situation of men and women (gender perspective). This means systematically examining measures and policies and taking into account such possible effects when defining and implementing them (European Commission 2007b, p. 5).

Thus, goals to be achieved through gender mainstreaming in education include gender equality in enrolment and completion rates, structural equality within the teaching profession and the addressing of gender stereotypes in school curricula and teacher education (Neimanis, 2001).

Notions of equality are culturally determined however as we have already seen. Thus, in Sweden which has been a pioneer in terms of policy-making on gender, the word *jämställdhet* approximating to 'of equal standing' in English has become an important concept (Weiner & Berge, 2001). It first appeared in the 1970s and signified, according to Hirdman (1988), agreement to a new 'gender contract' concerning a more equal relationship between men and women. It was acceptable to the wider populace mainly because it seemed visionary rather than threatening (Florin & Nilsson, 1998). In policy terms, *jämställdhet's* principal goal was to ensure that women and men should have equal rights, duties and possibilities to share power and responsibility. From the 1970s onwards, it was applied to paid and unpaid work, trade union activity and other social structures and activities, including education ([1]), and in the 1990s, it was extended to include violence against women. Thus rape and other forms of sexual abuse were seen as evidence of structural sex-inequality or *ojämställdhet* ([2]). Following the categorisations above, it could be argued that for Sweden, *jämställdhet* has been/is a powerful tool for ensuring the provision of formal opportunities, encouraging social and cultural change, and mainstreaming and embedding gender equality in Swedish governance.

'Equality' terminology has also to some extent been contested, for example, regarding interpretation of gender equality as compared with gender equity. UNESCO makes little differentiation between the two:

([1]) Proposition 1987/88:105 om jämställdhetspolitiken inför 90-talet [on gender equality politics for the 1990s] and Proposition 1994/95:164 Jämställdhet mellan kvinnor och män inom utbildningsområdet [on gender equality between men and women in the area of education and training] of the Swedish Parliament.

([2]) Proposition 1990/91:113 om en ny jämställdhetslag, m.m. [about the new gender equality legislation] of the Swedish Parliament.

> Gender equality, equality between men and women, entails the concept that all human beings, both men and women, are free to develop their personal abilities and make choices without the limitations set by stereotypes, rigid gender roles and prejudices ... Gender equity means fairness of treatment for women and men, according to their respective needs. This may include equal treatment or treatment that is different but which is considered equivalent in terms of rights, benefits, obligations and opportunities (UNESCO 2000, p. 5).

However, Magno and Silova (2007, p. 649) argue that there is a difference: 'gender equality' for them means the same, i.e. 'the assumption that all students should receive the same interventions, at the same time, in the same way' while their preferred option 'gender equity' implies the 'guarantee of fair educational outcomes, regardless of sex differences'.

Finally, the concept of **gender gap** has been introduced in recent years as examination performance has become equated with school and pupil success. The gender gap indicates the ratio of girls and boys studying and passing examinations in particular subjects, where the size and nature of the gender gap differs according to subject. Gender policy is aimed at reducing gender gaps overall and gaps have thus narrowed in some subjects in some countries (see Wiliam, 2000 below). However, certain subjects continue to show a gap in favour of boys e.g. Science, Technology, and others, a gap in favour of girls, e.g. Languages, Humanities subjects, as we shall see in some detail in section 5 on cross-national studies.

1.4. Sex differences research

One of the most often researched areas related to gender in education is the issue of sex differences, i.e. comparing male and female characteristics and performance. Maccoby and Jacklin (1974) attempted to summarise the general arguments and findings in their ground-breaking book *The Psychology of Sex Differences* which reviewed 1 400 research studies on sex differences. They concluded that whilst some patterns persist, for example, female superiority in verbal skills and male superiority in mathematical skills, it is difficult to untangle the influence of stereotyping on individuals' perceptions of and behaviour towards, events and objects, and also to separate out if, and to what extent, innate or learned behaviours underpin the development of behavioural or cognitive sex differences.

An overview in the mid 1990s of the literature on sex differences research found similar patterns to Maccoby and Jacklin (Gipps & Murphy, 1994). It was noted that though much research is sound, 'there remain studies whose quality is questionable' (Gipps & Murphy 1994, p. 55). Gipps and Murphy argued that the value of this research thus lies not so much in identifying and working with sex differences, but in understanding responses from people when confronted by test situations.

The validity of tests and other forms of assessment has been particularly important in the literature. Gipps and Murphy showed that tests which indicate sex differences may not necessarily be accurate in predicting performance or future capacity to learn. The sex differences produced might be due to a particular test itself or the differential responses to it from males and females, i.e. its gender bias. The tests might not reflect or predict capacity to learn as required by the school curriculum, but rather what researchers believe to be a particular capacity to learn. In summary, such tests may not be at all helpful in predicting which students are likely to achieve particularly well (or badly) in the school

context. Gipps and Murphy (1994) noted, like Maccoby and Jacklin previously, that the range of differences is small compared to the similarities existing between the sexes.

Wiliam (2000) likewise suggests that sex differences in cognition are small and have narrowed further in some subject areas in recent years.

> Perhaps the most important finding from the literature and … analyses is that sex-differences in achievement, even in subjects like mathematics and science, are small and have been decreasing steadily over the last 20 years. Very few of the tests show a standard mean difference in favour of either males or females of more than 0.4 which means that less than 4 % of the variation in individuals' test scores is related to sex differences (Wiliam 2000, p. 661).

Indeed, following Maccoby and Jacklin and drawing on her own review of 46 meta-analyses, Hyde (2005) holds that males and females are in fact quite similar on most, though not all, psychological variables. She advances what she terms a 'gender similarities hypothesis' as follows:

> The gender similarities hypothesis stands in stark contrast to the differences model, which holds that men and women, girls and boys, are vastly different psychologically. The gender similarities hypothesis states, instead, that males and females are alike on most-but not all-psychological variables... A few notable exceptions are some motor behaviours (e.g. throwing distance) and some aspects of sexuality, which show large gender differences. Aggression shows a gender difference that is moderate in magnitude (Hyde 2005, p. 590).

It is therefore difficult to account for educational differences between the sexes as based on biology because 'the pattern of sex differences is often unstable across cultures, across time within cultures, and also through time in the development of children' (Arnot et al. 1999, p. 57). To summarise the issues raised in this section, research on sex differences needs to be treated with caution despite its widespread application because the studies may themselves be stereotyped or biased towards one sex or the other, they may not test the most relevant skills and knowledge, and/or they may not be predictive of future (academic) performance.

1.5. Cross-national studies of achievement

Cross-national studies have utilised sex-differences research approaches (i.e. comparing girls' performance in relation to boys) both to assess different countries' examination scores in relation to each other, and also to ascertain to what extent educational performance is attributable to social as opposed to biological factors. Particularly interesting has been how any differences or 'gender gaps' are interpreted and the extent to which such studies are 'meta-evaluative' showing, for example, boys outperforming girls in a subject such as mathematics, or 'meta-analytic', concentrating on whether outcomes and differences have decreased since such studies began, that is, the impact of social influences (Brusselmans-Dehairs et al.,1997).

There is substantial variation in gender patterns across different countries (see more details in Chapter 2). For example, Iceland has demonstrated the greatest 'gender gap' in favour of girls in the three subjects of mathematics, science and reading assessed by the Programme for International Student Assessment (PISA). A recent study of Iceland's performance suggests a basic stability in patterns of gender difference over the years but also proposes that girls' relative superiority is due mainly to psychological factors such as their greater affinity with a 'learning culture' whilst boys'

performance is more affected by issues to do with (poorer) discipline and behaviour (Halldórsson & Ólafsson 2009, p. 50). Ireland, on the other hand, has been placed around the OECD country average for mathematics. A study of gender differences in mathematics in the Irish PISA in 2003 as compared to the local Irish Junior Certificate mathematics examination (Close & Shiel, 2009), showed different gender outcomes. In PISA, there was a stronger performance of male students overall, related to specific content areas (e.g. Space and Shape) that were absent from the national tests. There was thus stronger performance of boys at the top end of overall mathematical proficiency, stronger performance by boys on multiple choice questions and' greater self-efficacy in and lower anxiety about mathematics among boys. What the study indicates mostly, it seems, is that superiority of male performance in PISA and female performance in the national test are principally due to differences in test content and construction.

A problem with many such studies, as Yates and Leder (1996) point out, is that it is difficult to design a test which is culturally neutral. Thus sex differences identified in the tests may reflect the effects and biases of the instrument (as in the Irish case above) rather than of what it is designed to measure. Also, there is no 'flat playing field' or equal starting point given the considerable differences between countries in their provision of preschool education, age of entry into formal schooling, community resources such as libraries, training of teachers, general learning cultures and so on (Topping et al., 2003). So it is difficult to adduce which factors have the greatest influence and why. Such studies can it is true provide indicators of how a national policy is working in comparison with others. But they are less helpful in identifying particular causal factors, or what should or could be done to create a more equal gender system.

Despite these shortcomings, the possibilities of comparison and internationalisation give cross national studies their substance. It is in the comparisons of educational outcomes across the world that policy-makers can 'question the assumptions about the quality of their own country's educational outcomes' (OECD 2001, p. 27). A study comparing the gender outcomes of the PISA studies for Sweden and Switzerland suggests that while both countries perform at the upper end of the international spectrum, Sweden has an educational climate with a higher degree of gender equity (with the exception of reading) (Fredriksson et al., 2009). In asking what the two countries might learn from each other, the authors suggest that the study shows the way for 'Switzerland to get more equity without reducing quality. In Sweden the quality can be further improved, but it does not necessarily mean that [gender] equity has to be reduced' (Fredriksson et al. 2009, p. 66).

Results may also be aggregated for other purposes: for example, to show boys' 'natural' superiority in mathematics and science overall, or girls' greater competence in languages overall. Or differences between countries and over time can be read as indicative of the presence or absence of sex equality in a particular country or culture. Or such studies may indicate the gender 'image' of certain school subjects within countries or cultures (Boaler 1997; Paechter, 1998) or the distribution of resources and equipment to particular schools. Or, as the 1991 International Assessment of Educational Progress (IAEP) comparative study concluded, it is differences 'in the socialisation patterns of male and female students, both across countries and across time periods, as well as between students within a particular country at a particular time period, [that] are likely to be the most powerful factors influencing the development of gender differences in abilities and achievement' (Brusselmans-Dehairs et al. 1997, p. 19-20).

1.6. Social factors which influence girls' and boys' performance and behaviour

Other factors such as socio-economic differences, ethnic origin and language intersect with gender to influence educational performance and indeed, Sammons (1995) found that such social factors are more influential as students grow older.

> Controlling for attainment at age 11, girls and students of non-manual backgrounds and those not on low incomes obtained higher GCSE results than other groups. Thus disparities in absolute attainment related to gender and socio-economic factors increased as students grew older (Sammons 1995, p. 479).

Obstacles to high academic performance include poverty, family size and parents in unskilled or low skilled employment, while enhancements include higher social class level, being a girl and having educated parents (Sammons, 1995). Interestingly, membership of a minority ethnic group can be advantageous or disadvantageous, depending on its specific cultural disposition towards, and treatment by, education. Thus having a Black Caribbean or 'Black other' background in the United Kingdom produces a wider gender gap in favour of girls than in the case of other ethnic minority groups (DfES, 2007).

The interaction of different social factors can produce quite complex gender outcomes. In Spain, for example, research on the incorporation and progression of Roma children in compulsory secondary schooling shows that girls face more obstacles than boys in their transition from primary to secondary schools and also gain lower grades than their male counterparts. However, fewer Roma girls than boys leave school early, so that at the end of schooling twice as many Roma girls as boys remain in the system. It is argued that these school-leaving patterns are related to Roma family discourses which display a narrowed conception of women's roles and therefore make girls' involvement in education difficult. However girls' later continuance is more to do to their greater motivation for studies and learning (CIDE & Instituto de la Mujer, 2006).

How factors combine is also significant. For example, recent research in the United Kingdom (Melhuish et al., 2008) shows the continued impact on attainment of a wide range of family and home learning factors. The influence of both gender and home learning environment (HLE) on the attainment of younger children (age 3+) is particularly marked, where HLE involves frequency of reading to the child, visiting the library, teaching songs nursery rhymes, playing with letters and numbers, drawing/painting etc. Girls have a higher HLE (as reported by parents) than boys; so gender difference in attainment found at younger ages (in favour of girls) may principally reflect different levels of parental support. The same study also found that gender influences behaviour, both positively and negatively though has weaker effects on English (where girls have higher attainment) and mathematics (where boys have higher attainment) (Sammons et al., 2008). In Greece likewise it has been found that students at high risk of school failure include boys, students with psychological problems, those coming from backgrounds with low socioeconomic and educational levels or a combination of these factors (Livaditis et al., 2003).

Gender has also been found to intersect with special needs and disability in generally detrimental ways. Thus, in a Scottish collection of studies on gender and special needs in education, issues are

raised about the invisibility of girls with special needs – it is boys with learning and behavioural and emotional difficulties who attract most attention, concern and resources – and how the formal and hidden curriculum of schools affects issues such as restricted learning opportunities, low achievement and aspiration, poor self concept and body image, discrimination against (female) students with a disability, sexuality concerns and so forth (Lloyd, 1996).

1.7. Gender themes in current educational practice

A number of recurrent themes or topics are to be found in the literature on gender and education which deal primarily with educational practice (or what goes on in schools). These are the curriculum (official and hidden), school reading materials, subject preference and choice, motivational and psychological factors of students, school organisation and management, teacher attitudes, assessment, teaching as a profession, co-education and single-sex settings, and the problem of boys.

1.7.1. The curriculum (official and hidden)

The official curriculum concerns the subjects that are taught in schools and their content. It varies from country to country and in many there is a national curriculum. However, as the curriculum theorist Paechter (2000) points out, though official curricula tend rarely to address gender equality with the some exceptions such as Sweden and South Africa, they tend to imply certain gender assumptions; for example, that 'power' subjects (e.g. science, mathematics and technology) will attract males and others (e.g. languages, literature) females. This means that the content of different subjects attracts boys and girls on the basis that' 'this is what proper girls or boys do'. The hidden curriculum, on the other hand, concerns everything that happens in the school that is not 'official', for example, social relations in the classroom or playground, friendships, relationships between teachers and pupils, levels of bullying and harassment and so on. The hidden curriculum transmits to children a collection of messages which often reinforce sex stereotyping thus sustaining 'a sexual division of labour in the social process of schooling' (Humm 1989, p. 95). Studies of these more informal relations have been consistent in revealing the dominance of (individual and groups of) boys regarding the school space they occupy, the teacher-time that they demand, and the influence that they have over the rest of their peers (Myers et al., 2007). It is further argued that students' informal interactions within the school are the most influential aspect of their socialisation into what it means to be female and male in society, and that if this aspect of school culture remains unchallenged, nothing much is likely to change (Öhrn, 1998).

1.7.2. School reading materials

The gendered nature of reading material and other school texts provide important indicators of the extent of gender stereotyping in the education system as a whole. The language used is highly influential (particularly on younger children) and has drawn criticism in the past for excluding or demeaning girls and women and for favouring stereotyped gender roles; 'fireman' instead of 'fire fighter', boys who 'laugh' as opposed to girls who 'giggle' are two examples. Research studies have also focused on the frequency and manner in which the sexes are portrayed, and have found that men appear more often and in a wider set of roles as workers, whereas women are shown mainly in domestic and 'romantic' roles. Nilsen (1975) coined the phrase 'the cult of the apron' in her study of

58 award winning books in the USA because she found that women were usually depicted with aprons in the few illustrations she found of them. A recent Polish study suggests that textbooks used by older students are even more sexist than texts for younger children, not only concerning illustrations but the language used. Thus, Polish school textbooks, so the authors claim, are highly stereotyped, reproduce traditional beliefs and ignore important female figures as well as the goals and achievements of feminist and women's organisations (Środa & Rutkowska, 2007). Significantly, although most post-communist countries undertook textbook revision in the 1990s, the revised texts continue to show men and women as 'having different stereotypical gender roles' (Magno & Silova 2007, p. 651). More recently however topics on the social position of women and gender are beginning to appear in Poland, primarily in new textbooks and teaching materials being prepared to take into account the newest curricular reform.

A Spanish study of gender stereotypes in images present in school language and literature textbooks showed similar quantitative and qualitative biases. Regarding quantitative biases, women's pictorial representation in these materials was roughly half of men's (32.95 % of the total). Qualitative differences were found in the representation of both sexes, regarding image colours, which were pale and pink for women; characterisation and behaviour, which were based on gender stereotypes; and spatial representation, which mainly positioned men in public and women in private spaces. An interesting finding of this study was that the gender composition of editorial teams which produced the texts had little impact on the levels of stereotyping evident within the texts (Luengo & Blázquez, 2004).

Reading materials produced more recently in some countries (e.g. Sweden, South Africa, United Kingdom, USA) have responded to some of the criticisms made. Thus, care has been taken to ensure that illustrations are non-sexist and that language is neutral (see, for example, Desprez-Bouanchaud et al., 1987) even though the narrative form, say of the classic fairy tale of the rescue of the princess by the prince, remains much the same (Skelton, 1997). Attention has also been drawn to how best to encourage more children to read, and therefore the kind of library services which are provided and the commitment there is to promoting learning in the library for all children (Adler, 2007).

1.7.3. Subject preference and choice

An early concern of feminists was the different subject and career pathways that girls and boys take. A national curriculum which allows little subject choice tends to reduce the gender gap in subject choice and attainment as was seen in the United Kingdom following the introduction of a national curriculum in 1988 (Arnot et al., 1999). However where choice is allowed, boys generally choose 'male'-identified subjects and career/vocational pathways and girls 'female'-identified subjects and career/vocational pathways. School leaver destination statistics in Europe (see Chapter 5) show that many young people still opt for gender-stereotyped career choices and it has been argued therefore that careers advisers need to be more gender aware, and thus more able to challenge stereotyped assumptions of students, schools cultures and employers (see Chapter 4).

Noted recently in some countries, however, is that such gender disparities have reduced for (some) middle-class students (for example, those attending fee-paying schools) where there is more of a convergence in terms of subject choice and career destination (Arnot et al., 1999). This convergence has also been found for girls and boys attending single-sex schools in Britain where there seems to be less pressure to conform to sex stereotypes (Skelton & Francis, 2009).

Interestingly, variations have been found in the interaction between subject content and context. A recent Greek study shows that boys are most likely to use technology for entertainment and 'web-page creation' than girls although there is little gender difference in other reasons for using technology such as communication, social networking, information searches and so on (Papastergiou & Solomonidou, 2005). This matches results from a Eurydice secondary analysis of 2003 PISA data on gender differences in ICT use (Eurydice, 2005). Girls and boys have also been found to be interested in different aspects of science. For example, a study by Häussler and Hoffman (1997, 1998) showed that among pupils aged between 11 and 16 in different *Länder* in Germany, girls had less interest than boys in physics, and that boys and girls were interested in different aspects of science – with girls more interested in 'light, sound and heat' than in 'mechanics, electricity and radioactivity'. Echoing the findings reported above, Häussler and Hoffman found that girls choose careers in art, medicine and counselling, and boys choose physics 'as a basis for work in research or technical fields' (Häussler & Hoffman, 1997, 1998). The researchers conclude that while the interests stemming from gender 'are not very significant' girls seem to prefer subjects that are more useful for their everyday lives (see Eurydice, 2006).

Despite some improvements, the persistence of gender differences in science take-up has led feminist scholars and science educators to develop new ways of 'doing' science, and of asking and answering scientific questions. It is argued that such developments are necessary, because otherwise scientific knowledge and the methods through which it is generated merely reproduce ideologies and power-relations that exist in societies (Brickhouse, 2001). For example, qualities that are encoded in scientific inquiry such as 'rationality' are usually associated with masculinity and 'masculine' ways of thinking. Such arguments have led to the development of alternative curricula that can 'empower' students, most importantly girls, to contribute to science and to the expansion of teaching practices and pedagogies that aim to change traditional scientific hierarchies (Brickhouse, 2001).

1.7.4. Motivational and psychological issues

How students feel about themselves has been perceived as crucial to their school performance; thus, studies of gender difference in student 'self-concept' have been of much interest. However research evidence is inconclusive with findings ranging from little evidence of difference to males having far higher self images. Student 'motivation' to do well at school is also an important factor. For example, a Belgian study suggests that (some) boys' underachievement is associated with their generally negative attitudes towards schools, in particular their less positive relationships with teachers, lack of feeling of well-being while in school, and their poor attitude towards schoolwork. However, the study also shows that at lower academic levels, boys who are least attentive in the classroom, least interested in learning tasks and least motivated towards learning tasks achieve better than predicted. Analysis suggests that these individuals are able boys who are particularly 'demotivated' (Van de Gaer et al., 2006). In Scotland, boys' behaviour is demonstrably worse than that of girls, with four times as many secondary-aged boys than girls facing exclusion from school (SEED, 2006).

1.7.5. School environment

Evidence has emerged that students' achievement levels are much influenced by the school environment and, in particular, the daily management and organisational procedures of schools which are frequently reliant on gender as a management tool. Girls and boys may be separated for

classroom registers, classroom activities and team sports, for example. Dress codes may be different for boys and girls (trousers for boys, skirts for girls) and also for members of staff (Scott, 2007). Such practices are criticised because they have little educational benefit save as deliberate 'marker' of gender difference. On the other hand, investment of time in the development of institutional policies and associated staff development (SEED, 2006) which address, for example, bullying and sexual harassment have been shown to be effective in raising pupil and staff consciousness that such behaviour is demeaning and unacceptable.

1.7.6. Teacher attitudes

Even when teachers believe that they treat their students equally, they are more likely to chastise male students and pay them more attention, while at the same time creating greater dependency in their female students (see Magno & Silova, 2007 for examples from several Eastern European countries). Hence, a variety of studies from different countries have shown that both male and female teachers tend to encourage passivity and conformity in their female students while at the same time valuing independence and individuality in their male students (see for example, Golombok & Fivush, 1994). They thus allow boys to be naughtier because they think it natural and, for the same reasons, expect girls to take up 'domestic' related activities such as caring for others or cleaning-up in the classroom. Girls are generally perceived to be more cooperative and malleable, and boys more confident and able. Even when girls are seen as better students, such as by science teachers in Chetcuti's (2009) Maltese study, the reason given is behavioural rather than cognitive or intellectual, i.e. that girls are more meticulous in their work and 'study harder' than boys (Chetcuti 2009, p. 88).

Thus teachers' general lack of awareness of how they use gender as an important organising and categorising factor, and their tacit assumptions about gender have together had a profound effect on student behaviour (Tsouroufli, 2002). One solution suggested to Scottish teachers is to engage in gender-sensitive teaching which both addresses students' different learning styles and preferences, and avoids the imposition of stereotypes (SEED, 2006).

1.7.7. Assessment

Assessment procedures have frequently been found to be gendered, despite claims of neutrality and lack of bias. This has become even more important in recent years with the relative greater emphasis on the achievement targets of individuals, schools and countries, and the increasing influence of cross-national studies such as PISA and TIMSS. Similar criticisms to that of reading materials have been made of examination papers and assessment texts: predominance of male participants and settings, frivolous treatment of women, and sexist language and illustrations. Additionally studies show that girls/women tend to be marked down and boys/men marked up where the sex of candidates is known which has led in some countries to the anonymising of the name (and sex) of the student (Goddard-Spear, 1989; Willingham & Cole, 1997). In the United Kingdom, as already noted, girls had to reach a higher threshold in the 11+ examination compared to boys for entry to selective schools. Illegal now, this was deemed acceptable because it 'equalised' the numbers of boys and girls going to such schools. In terms of examination content, boys have been found to perform significantly better than girls on multiple choice tests across subject areas, while girls do slightly better in course work and 'essay-type' assessments (Gipps & Murphy, 1994).

1.7.8. Teaching as a profession

Teaching has long been considered as 'a good job for a woman' by feminists and non-feminists alike. Feminists have seen teaching as part of the long struggle of women to gain access to the professions and to the public sphere; and non-feminists, as an extension to women's mothering and caring role in the family. Meanwhile, teaching has generally had a relatively low-status position in the hierarchy of the professions possibly due to its heavy reliance on female staff. In 2006 in all European Union countries (except Greece and Luxembourg) over 60 % of teachers in primary secondary education were women. For secondary schooling, while there are still more women than men, the gender 'gap' is much narrower (see Chapter 7).

School leadership however contains proportionally more men (see Chapter 7), as do teacher education inspectorate and assessment organisations, civil servants concerned with education etc., and this seems as pronounced in post-communist countries (Magno & Silova, 2007; see also Dweck & Sorich, 1999). Explanations for this hierarchy both within the teaching profession and in relation to other professions have been many and varied. Some suggest that the key factor is the association of teaching with domesticity, care and the emotions (Fischman, 2000; Drudy, 2008) which makes teaching more appropriate for women while others focus on its work characteristics and that women are more accepting of teaching's low status and low salaries because it is a form of work that is compatible with women's domestic responsibilities (Weiner, 2002).

1.7.9. Co-education and single-sex settings

Co-education has different meanings in different countries. On the one hand, the label is used descriptively to refer to the fact that the school takes in girls and boys, but otherwise is no different from other schools. On the other hand, co-education can be interpreted as more ideologically laden, and associated with policies of gender equality, as suggested by Crosato et al. (2005).

> Co-education accepts the biological difference between men and women, but rejects the assumption of male and female stereotypes, therefore automatically rejecting the existing hierarchical structure which favours men over women and thus enabling other barriers of hierarchy to be broken down. Co-education consists of education girls and boys alike in a context over and above those gender roles which society prescribes for each sex (Crosato et al. 2005, p. 65).

Studies of mixed-sex classrooms have consistently shown that boys receive more teacher attention and that teachers place more importance on boys' learning and boys' presence generally (Epstein et al., 1998). Co-education is contrasted with single-sex schooling which draws advocates from both conservatives and progressives on the gender spectrum. The conservative argument for single-sex schools is that they enable the boys and girls to be inducted into the prescribed roles demanded by society (and also frequently religion). Feminist advocates of single-sex schools argue the contrary; that single-sex schools allow girls and boys greater freedom to choose subjects not associated with their gender and to flourish in a wider range of school subjects than conventionally acceptable in mixed sex schools. While single-sex education may enable the exercise of greater choice, it is suggested that such environments are unable to eliminate the impact of wider society (Skelton & Francis, 2009). Single-sex classes were pioneered in the late 1980s in Denmark as a means of providing space for girls and improve their self-confidence (Kruse, 1992). They are now occasionally

organised in mixed-sex schools, primarily to permit teachers to employ classroom strategies that might be more suited to one gender or the other. Single-sex groups enable, for example, girls to feel freer to answer questions and to participate more in lessons, and boys to work harder without worrying about their own 'image' as a learner (Younger & Warrington, 2007). Single-sex classes could thus, it is argued, improve motivation, behaviour and achievement (SEED, 2006).

1.7.10. The problem of boys

As we have seen, from the late 1970s onwards gender issues in education were associated principally with a focus on the achievements and aspirations of girls, in order, as it was argued, to redress the power imbalance in favour of boys and men. However, because of the increased emphasis on examination achievement in recent years and the narrowing of the gender gap in favour of female students, much interest in gender has reverted to concern about the perceived 'underachievement of males' (OECD 2001, p. 122). Thus in recent years and in many countries, gender issues in education have come to be equated with boys' relative underperformance in examinations, and a so-called crisis of masculinity. Thus in 2006, researchers claimed the following for Sweden:

> Boys attain approximately 90 per cent of the girls' grade results in compulsory as well as upper compulsory school. At compulsory school girls have better grades in all subjects except physical education and health (Skolverket 2006a, p. 97).

This interest in boys' relative failure is due to a number of factors: policy interest in examination patterns as the main indicators of the effectiveness (of education systems, local governance, schools); concern about youth violence and social disorder; concern about family break-down and male irresponsibility, a perceived crisis in masculinity and so on. However, as pointed out in the Swedish study, 'this does not mean that all boys fail with their education or that all girls achieve good educational results' (Skolverket 2006a, p. 97). Overconcentration on male under/achievement, in fact, masks a number of issues; for example, that certain (social) groups of boys do very well in examinations, that certain groups of girls do not, and that sexism, racism, bullying and sexual abuse all inhibit achievement in examinations as well as damaging personal relations. Such an emphasis on boys also fails to link schooling with the labour market and to acknowledge that even though girls may get higher grades overall and may invest more heavily in higher education, they remain more likely to go into low-paid and insecure jobs, and to live in poverty. The focus on masculinity (or masculinities as there are many routes to becoming an adult male) in crisis is potentially fruitful however in the sense that it shifts emphasis away from structural factors in post-industrial societies which position (some) boys as inevitable 'losers'. Instead, the aim is to explore the characteristics of masculinity (or masculinities) that inhibit boys as learners and citizens, and how these might be challenged (Epstein et al., 1998; Pickering, 1997).

1.8. Conclusion

This chapter has sought to provide an overview of the main issues in gender research as they apply to education, and the ideas and initiatives aimed at bringing about change. It has also attempted to show what is distinctive about working with gender issues in education and how they interconnect with other aspects in society.

We can see from the literature analysed that there has been a shift from gender and education as a field largely concerned with righting the wrongs against girls and women, historically, culturally and educationally, to a policy field influenced by cross-cultural studies of examination performance and boys' educational underachievement. Sex difference research remains the most popular study of gender issues in education and is especially prominent in cross-cultural studies of achievement.

Clearly, education cannot be viewed as the main instrument for producing equal opportunities, because society as a whole does not provide equal opportunities in terms of gender related income differences and gender stereotyping, for example. However, education provides an important socialising context, such that students' informal interactions in schools are an influential (and largely unrecognised) aspect of their socialisation into restricted gender roles.

The 'wave' metaphor used for feminism is appropriate to describe movements aimed at achieving educational equality between girls and boys, men and women. In the 1970s and 1980s, it was Western countries that were leading the way in pointing out gender inequality and western feminism still has much to offer to educational policy-makers and practitioners, particularly in recent exploration of how young people themselves construct and perform specific versions of masculinity and femininity.

Most countries in Europe and elsewhere have engaged with feminism to some extent, with a variety of implications for educational policy and practice. The issues covered and the practical actions taken have been largely similar: that is, establishing the extent of gender inequality and the role of education in its sustenance, arguments and persuasion of the need for change, and practical strategies aimed at changing what goes on in schools (see Chapter 3). Gender policy-making by the EU has undeniably been an important influence, in particular on countries which have recently joined or wish in the future to achieve membership. We have also seen a new wave of interest from countries in the former communist bloc, where the long-standing rhetoric concerning the importance of social equality seems to have coalesced with feminism, ideas about democracy and a greater freedom to act, to produce creative possibilities for the future. It will be interesting to see which other feminist waves predominate in the future as European societies change and as new aspirations for a gender-equitable society emerge.

CHAPTER 2: GENDER PATTERNS IN INTERNATIONAL ASSESSMENT SURVEYS

This chapter aims to address the issues of educational quality and equity through an examination of the gender patterns evident in three academic subjects namely, reading, mathematics and science. These three subject areas are the foundation of the basic skills required by modern labour markets. Understanding the gender patterns in these subject fields is vital for achieving equality of opportunity in employment. For example, as statistical data show, one such pattern is that women are under-represented at tertiary level in the fields of mathematics, science and technology while, in the fields of education and health, there are relatively few men (see Chapter 8). Such educational and occupational choices might be partly explained by children's performance at school and their motivation and attitudes towards particular subjects. Thus, gender differences in mathematics and science achievement at school are also useful in understanding female under-representation in these fields at higher levels of education. Similarly, male underachievement in reading might help us understand why there are relatively few men in the spheres of education and the humanities.

Employing a distinction made in Chapter 1, this chapter discusses the 'gender gaps' in terms of boys outperforming girls or girls outperforming boys in certain subjects, but it does not analyse whether such gaps have increased or decreased over time. The gender patterns in achievement according to field of study are discussed with reference to the relevant studies: the section on reading achievement quotes the Progress in International Reading Literacy Study (PIRLS) and the Programme for International Student Assessment (PISA) surveys; while sub-sections on mathematics and science discuss the Trends in International Mathematics and Science Study (TIMSS) and PISA. In the first section of this chapter, the gender differences in mean scores for average student performance are discussed in detail. Some interesting gender divergent tendencies in attitudes and practices are also presented. Furthermore, possible explanations or factors influencing the gender gap are discussed in greater detail. The effect of different study programmes chosen by girls and boys is analysed, as well as the relative importance of other demographic factors, such as socio-economic status and immigrant background. For further information on the surveys and applied statistical techniques, see the Glossary.

Only the data of European countries that participate in the Eurydice network are analysed. Likewise, the presented EU-27 average refers only to the EU-27 countries which participated in a particular survey. It is a weighted average where the contribution of a country is proportional to its size.

Before starting the discussion on gender patterns in student achievement it is important to highlight some general issues.

- When analysing country differences, it is important to remember that variation in student performance within countries is many times larger than the variation between countries.
- The presented results of studies from various years cannot be straightforwardly interpreted as trends. Direct comparisons of results of different surveys that use different assessment methodologies, target population, test contents, etc. should be avoided. Even within the same survey, an analysis of trends over time comparing different rounds might be problematic.
- As mentioned in the research overview in Chapter 1, any gender gap might be influenced by assessment methodology. Varying proportions of constructed-response and multiple-choice items in tests may influence the performance of boys and girls differently. A greater proportion of

questions requiring higher-level competency favours boys in mathematics and girls in reading (Close & Shiel, 2009; Lafontaine & Monseur, 2009).

Results suggest that the most visible and consistent gender difference is the advantage of girls in reading. However, gender is only one of the factors that account for achievement in various subject fields. Socio-economic status is a very strong factor; thus it is important to consider family background alongside gender when supporting children who are underachieving.

2.1. Average gender gaps in achievement

2.1.1. Gender patterns in reading achievement

All recent international assessment studies agree that girls tend to have a higher reading achievement than boys. The gender gap emerges early – it is already present among students in the fourth year of schooling – and is maintained with age, as assessments of 15 year-olds confirm. Similar gender patterns are reported in most studies of reading assessment thus this section focuses on the most recent results.

PIRLS 2006 results showed that among students in the fourth year of schooling girls had significantly higher reading achievement than boys in all except two countries, Spain and Luxembourg, where average achievement was equivalent between the sexes (Mullis et al., 2007). The study reported further interesting gender differences regarding reading domains or reading purposes. Girls have a significantly higher average achievement in literary reading in all European countries. In contrast, in reading for information, some European countries (French Community of Belgium, Spain, Italy, Luxembourg and Hungary) have little, if any, gender difference.

In all countries except Spain, girls report more time spent reading books or magazines than boys and in many countries boys report more time than girls spent reading on the Internet. However, in the Flemish Community of Belgium, France, Lithuania, Hungary, the Netherlands, the United Kingdom (England and Scotland) and Norway, boys and girls spend similar amounts of time on the Internet.

Gender patterns in achievement vary not only across countries, but also across schools in individual countries. A two-level regression analysis by country was conducted nesting pupils within schools. In most countries, the gender gap in reading varies significantly from one school to another. Only in the French Community of Belgium, Spain, Luxembourg, Hungary and the United Kingdom was there no variation between schools regarding the gender gap in achievement. Such findings suggest that school-level factors shape the disparities in reading achievement of boys and girls. Unfortunately none of the school-level variables collected in PIRLS 2006 could explain the gender gap – the correlations between gender gap in reading and school-level variables were very low (less than 0.10).

Girls' higher achievements in reading were also observed in studies that assess older students. In the three PISA surveys of 15-year-olds, significant differences in favour of females were reported for virtually all European countries. The European countries with the largest gender difference in PISA 2006 (see Figure 2.2a) were Bulgaria, Greece, Lithuania, Slovenia and Finland – the average gender gap ranged between 51 and 58 score points, which is more than a half of an average standard deviation in OECD countries. The smallest gender differences in reading achievement were observed in Denmark, the Netherlands and the United Kingdom, but the gap nevertheless amounted to about a

quarter or more of the average standard deviation (average gap 24-30 score points). These results suggest that the superior performance of females in reading is widespread, with the difference being both large and significant.

It is necessary to note that large gender differences do not inevitably imply poor male achievement in reading. In Finland, which is the leading European country on average reading score, it is not that males do poorly in reading – their scores are above the international average and the highest among males in Europe – but rather that females score exceptionally well (OECD, 2007b). However, in other countries with large gender gaps, the overall reading achievement is not as high: in Bulgaria and Greece both males and females score below the international average. The Lithuanian total score is below the international average, while Slovenia performs at almost international average. Such disparities seem to imply that the magnitude of the gender gap does not relate to the overall achievement level ([1]).

PISA 2000, which focused on reading, found that females have a much higher level of engagement with most forms of reading activities; they read more diverse material and use libraries more often than males. 15 year-old boys had limited engagement in reading beyond what was required of them. The majority of boys read only to get the information they need. When boys and girls read for pleasure, they also read different materials: females were more likely than males to read more demanding texts, such as fiction, while males were more likely to read newspapers and comic books (OECD, 2001, 2002). As mentioned previously, PIRLS 2006 indicated similar patterns.

2.1.2. Gender patterns in mathematics achievement

In mathematics gender gaps are less pronounced and more unstable than in reading. TIMSS results regarding gender differences in mathematics are somewhat mixed, but mostly show no consistent gender gap among pupils at the fourth and eighth year of schooling. Moreover, TIMSS results should not be interpreted as trends because participating countries differed across rounds and across the grades of pupils tested.

The first survey, TIMSS 1995, showed that gender difference in mathematics in the fourth year of schooling was small or non-existent (Mullis et al., 2000a). The difference in achievement between males and females was not significant in all participating European countries except the Netherlands. Gender differences in mathematics were also minimal in most countries among pupils in the eighth year. In the final year of secondary school, however, males had significantly higher average achievement than females ([2]); only in Hungary were there no significant gender differences in mathematics. In advanced mathematics, males outperformed females in the Czech Republic, Denmark, Germany, France, Lithuania, Austria and Sweden, while there was no gender difference in Greece, Italy, Cyprus and Slovenia (Ibid.).

TIMSS-R 1999 allowed countries which assessed pupils in the fourth year of schooling in 1995 to compare their performance in that year with their performance in year eight in 1999. In year eight, most gender differences were negligible in mathematics. Most importantly, the study found no change

([1]) The correlation between country mean estimate and country gender gap does not statistically differ from zero (-0.35, p=0.07).

([2]) In the Czech Republic, Denmark, Germany, France, Italy, Cyprus, Lithuania, the Netherlands, Austria, Slovenia, Sweden, Iceland and Norway.

in average mathematics achievement between boys and girls in 1995 and 1999 in any country (Mullis et al., 2000b). TIMSS 2003 assessment of mathematics in the fourth and eighth years again confirmed that gender differences in mathematics were insignificant in many countries ([3]).

TIMSS 2007 results differ considerably (Mullis et al., 2008). Contrary to the previous rounds, boys scored higher in most European countries in the fourth year of schooling (the Czech Republic, Germany, Italy, the Netherlands, Austria, Slovenia, Slovakia, Sweden, the United Kingdom (Scotland) and Norway), while in the eighth year there were no gender differences (the Czech Republic, Italy, Hungary, Malta, Slovenia, Sweden, the United Kingdom (England and Scotland), Norway and Turkey) or girls had higher achievement than boys (Bulgaria, Cyprus, Lithuania and Romania). Such results might suggest that there are no consistent gender differences in mathematics in the fourth and eighth years of schooling.

PISA reported some male advantage in all rounds although not in all countries. The PISA 2000 assessment of 15-year olds revealed that males scored better than females in half of the European countries, while there were no differences in the rest (OECD, 2001). Much of the male advantage was due to more males performing exceptionally well and not to a relative absence of males among poor performers. Among students who performed poorly (those students typically not able to complete a single processing step consisting of reproducing basic mathematical facts or processes or applying simple computational skills), the proportion of females and males was roughly equal (OECD, 2001).

PISA 2003 results showed rather small gender differences in student performance, i.e. males performed significantly better in mathematics only in Greece, Slovakia, and Liechtenstein (OECD, 2004). Although females generally performed at similar levels to males, they tended to report lower levels of interest and enjoyment in mathematics. On average, boys had higher self-efficacy, i.e. a higher level of confidence in tackling specific tasks. Boys also had higher levels of belief in their mathematic abilities than girls, i.e. self-concept. Conversely, girls had higher anxiety levels regarding mathematics. Poland was the only country showing no significant gender difference in levels of self-efficacy, self-concept and anxiety in mathematics. In parallel, Italy also showed no significant gender differences regarding self-concept and anxiety (OECD, 2004).

The PISA 2006 assessment found significant male advantage in average mathematics achievement in approximately half European countries. There was no gender gap in Belgium (French and German-speaking Communities), Bulgaria, the Czech Republic, Estonia, Greece, France, Latvia, Lithuania, Slovenia, Sweden, Iceland, Liechtenstein and Turkey (see Figure 2.2b).

2.1.3. Gender patterns in science achievement

In science, gender differences tend to be the smallest of the three subjects discussed here. Moreover, subject to the emphasis of the test, e.g. physics or life sciences, and age group tested, international student assessment surveys report different gender patterns. TIMSS studies often find gender gaps in favour of boys, whereas PISA reports generally show no significant gender differences.

([3]) In the fourth year there was no gender gap in the Flemish Community of Belgium, Latvia, Lithuania, Hungary, Slovenia, the United Kingdom (England) and Norway while boys led girls in Italy, Cyprus, the Netherlands and the United Kingdom (Scotland). In the eighth year there was no gender gap in Bulgaria, Estonia, Latvia, Lithuania, the Netherlands, Romania, Slovenia, Slovakia, Sweden, the United Kingdom (Scotland) and Norway. Girls scored better in Cyprus, while boys scored better in the Flemish Community of Belgium, Italy and Hungary (Mullis et al., 2004).

TIMSS 1995 data showed that there were no significant gender differences in science achievement in the fourth year of schooling in seven participating European educational systems, whereas males outperformed females in five ([4]) (Mullis et al., 2000a). In the eighth year, however, gender differences in science were present in most participating countries. Boys had higher achievement, particularly in physics, chemistry and earth sciences. In the final year of secondary school, males had significantly higher achievement in scientific literacy than females in all countries. However, achievement differed by subject areas: males outperformed females in earth sciences, physics and chemistry, but not in life sciences or environmental education (Ibid.).

TIMSS-R 1999 showed that, in the eighth year of schooling, boys outperformed girls in eight European countries, while there was no gender gap in seven countries ([5]). A significant reduction in the gender difference between 1995 and 1999 occurred only in Slovenia (however, it was due to boys scoring lower than before, not girls improving); in the remaining countries the gender gap stayed the same.

TIMSS 2003 revealed that there was no gender gap in the fourth year in most countries (the Flemish Community of Belgium, Italy, Latvia, Hungary, Slovenia, the United Kingdom (England) and Norway). However, in year eight, boys had significantly higher achievement than girls in the majority of countries. Only in Estonia and Cyprus was there no gender gap in science achievement. Nevertheless, girls showed greater improvement on average than boys, especially from 1999 (Martin et al., 2004).

TIMSS 2007 again found no gender gap in the fourth year of schooling in seven European countries (Denmark, Latvia, Lithuania, Hungary, Sweden, the United Kingdom (England and Scotland) and Norway) but reported a lead for boys over girls in six (the Czech Republic, Germany, Italy, the Netherlands, Austria and Slovakia). Regarding science achievements of pupils in year eight, there was no gender difference in most countries (Lithuania, Malta, Slovenia, Sweden, the United Kingdom (England and Scotland) and Norway); girls scored higher in Bulgaria, Cyprus and Romania, whereas boys performed better in the Czech Republic, Italy and Hungary (Martin et al., 2008).

Contrary to TIMSS findings, the PISA 2000 assessment of 15-year-olds' science achievements did not report significant gender differences. Males scored better in Denmark and Austria, while females did in Latvia (OECD, 2001). PISA 2003 found male advantage only in a few countries (Denmark, Greece, Luxembourg, Poland, Portugal, Slovakia and Liechtenstein) and no gender gap in the majority. Girls outperformed boys in Finland and Iceland (OECD, 2004). The differences between TIMSS and PISA results might be partly explained by the fact that the PISA assessment emphasises life sciences more than TIMSS. This is an area were females perform better also in TIMSS (OECD, 2001).

PISA 2006 also reported that overall gender differences were the smallest in science when compared to reading and mathematics. As Figure 2.2c shows, on average there was no gender gap in most countries. Females had higher results in Bulgaria, Greece, Latvia, Lithuania, Slovenia and Turkey, while males scored higher in Denmark, Luxembourg, the Netherlands and the United Kingdom (England). However, despite performing equally as well as boys in most countries, girls tend to have

([4]) There was no gender gap in Ireland, Greece, Cyprus, Portugal, the United Kingdom (England and Scotland) and Norway. Males outperformed females in the Czech Republic, Hungary, the Netherlands, Austria and Island.

([5]) There was no gender gap in the Flemish Community of Belgium, Bulgaria, Italy, Cyprus, Romania, Finland and Turkey. Boys scored higher in the Czech Republic, Latvia, Lithuania, Hungary, the Netherlands, Slovenia, Slovakia and the United Kingdom (England) (Martin et al., 2000).

lower self-concept than males in science i.e., on average, girls had lower levels of belief in their scientific abilities than boys in all European countries. Boys also had higher self-efficacy, i.e. a higher level of confidence in tackling specific scientific tasks in all countries, except Austria, Poland and Portugal.

As PISA 2006 focused on science, it reported other interesting issues. On average females were stronger in *identifying scientific issues*, while males were stronger at *explaining phenomena scientifically*. In most other aspects of self-reported attitudes towards science there were no consistent gender differences. Both boys and girls had similar levels of interest in science and there was no overall difference in boys' and girls' inclination to use science in future studies or jobs (OECD, 2007b).

***

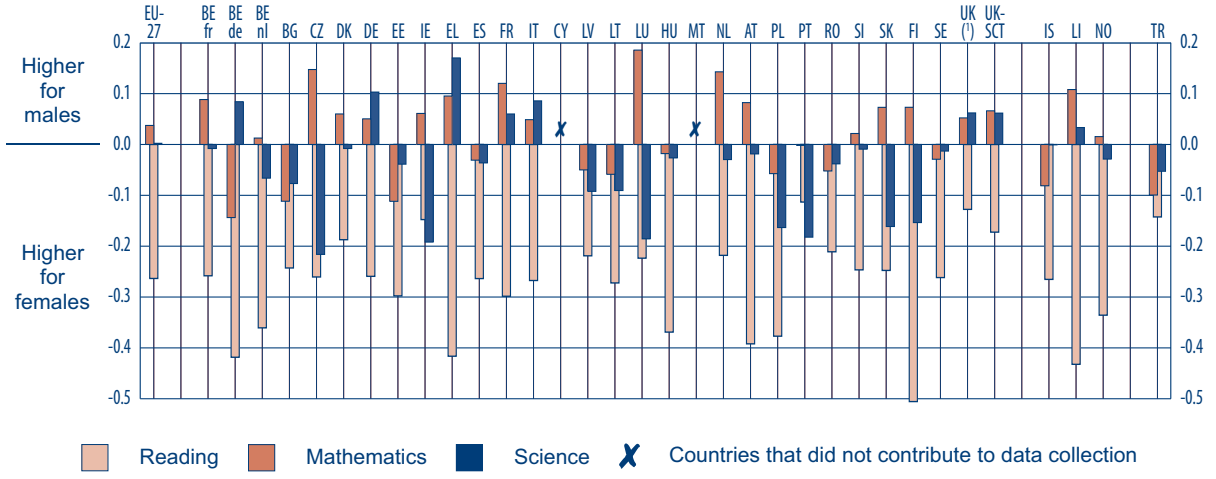
Data on low achievers and/or students without basic skills are invaluable indicators of inequality in education. The PISA scores are allocated to scales divided into difficulty levels that represent groups of PISA test questions. The scales allow concentrating on performance or competencies levels, including examination of poor performance. For example, a student demonstrating the most basic skills is allocated to proficiency Level 1, while a student without the skills needed to correctly complete the easiest questions on a PISA test is classified as below Level 1.

Table 1 (in annexe) shows the relative risk of scoring at the lowest proficiency levels (Level 1 or below) in reading, mathematics and science by gender. Reflecting average gender differences, boys are more likely to be amongst the poorest performers in reading in all countries except Liechtenstein. In mathematics, among low achievers, the proportion of females and males is approximately equal in most countries. Girls are at greater risk of scoring at the lowest proficiency levels in the Czech Republic, Denmark, Germany, Italy, Luxembourg, the Netherlands, Austria, Portugal, Slovakia and the United Kingdom (England, Wales and Northern Ireland). Only in Iceland boys are more likely to be amongst low achievers in mathematics.

In science, there are no gender differences amongst low achievers in most countries. Boys are more likely to have low scientific literacy in Bulgaria, Ireland, Latvia, Lithuania, Slovenia, Finland, Iceland and Turkey. Interestingly, there were no gender differences amongst the poorest performers in those countries where boys on average tend to perform better than girls (Germany, Luxembourg, the Netherlands and the United Kingdom (England)).

Motivation, or interest, in certain study fields is often considered as a factor for predicting achievement (Renninger et al., 1992). Figure 2.1 shows gender differences in perceived importance of doing well in reading, mathematics and science. The data suggests that the perceived importance of doing well in mathematics and science, on average, does not differ by gender. Although either boys or girls attribute more importance to these subjects in some specific countries, usually there are no perceivable gender differences. Reading, however, is considered important by far more girls than boys in all European countries.

Figure 2.1: Gender difference (M-F) in perceived importance of doing well in reading, mathematics and science for 15 year-old pupils, 2006



	EU-27	BE fr	BE de	BE nl	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU
Reading	**-0.26**	**-0.26**	**-0.42**	**-0.36**	**-0.24**	**-0.26**	**-0.19**	**-0.26**	**-0.30**	**-0.15**	**-0.42**	**-0.26**	**-0.30**	**-0.27**	✗	**-0.22**	**-0.27**	**-0.22**
Mathematics	**0.04**	**0.09**	**-0.14**	0.01	**-0.11**	**0.15**	**0.06**	**0.05**	**-0.11**	**0.06**	**0.10**	-0.03	**0.12**	**0.05**	✗	**-0.05**	**-0.06**	**0.19**
Science	0.00	-0.01	0.08	**-0.07**	**-0.08**	**-0.22**	-0.01	**0.10**	-0.04	**-0.19**	**0.17**	-0.04	0.06	**0.09**	✗	**-0.09**	**-0.09**	**-0.19**

	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK (1)	UK-SCT	IS	LI	NO	TR
Reading	**-0.37**	✗	**-0.22**	**-0.39**	**-0.38**	**-0.11**	**-0.21**	**-0.25**	**-0.25**	**-0.51**	**-0.26**	**-0.13**	**-0.17**	**-0.27**	**-0.43**	**-0.34**	**-0.14**
Mathematics	-0.02	✗	**0.14**	**0.08**	**-0.06**	0.00	-0.05	0.02	**0.07**	**0.07**	-0.03	**0.05**	0.07	**-0.08**	0.11	0.02	**-0.10**
Science	-0.03	✗	-0.03	-0.02	**-0.16**	**-0.18**	-0.04	-0.01	**-0.16**	**-0.15**	-0.01	**0.06**	0.06	0.00	0.03	-0.03	-0.05

UK (1) = UK-ENG/WLS/NIR.

Source: OECD, PISA 2006 database.

Explanatory notes

The results are based on answers to the question: 'in general, how important do you think it is for you to do well in the subject below?' with four answer categories: very important, important, of little importance and not important at all. The graph shows coefficients of three different simple linear regression models.

For further information on the PISA survey, see the Glossary.

Values that are statistically significant (p<.05) are indicated in **bold**.

2.2. Factors influencing achievement and gender gaps

2.2.1. Impact of streams (tracks) and falling behind at school

It is also relevant to consider to what extent the gender gap is related to gender differences in the distribution of students across different streams or tracks (school programmes) and year groups. Almost all educational systems at upper secondary level divide pupils into separate study streams that have distinct curricula and award different school leaving certificates for the different qualifications acquired by pupils. Several European education systems introduce different streams immediately after primary school. General or academically-oriented study streams usually provide easier access to university programmes, while vocational streams traditionally prepare pupils for particular occupations and entry into the labour market (although they often also provide possibilities for further education). Boys and girls tend to participate in different study programmes, with more girls in more demanding, academically-oriented and humanities-based tracks, while more boys are in vocational streams (see also Chapter 5).

Boys tend to both fall behind in school (due to starting school later) and be required to repeat school years more frequently than girls (see Chapter 5). PISA 2006 revealed that, in most countries, there were statistically significant differences in the number of school years completed by 15 year-old boys and girls, with more boys than girls having completed only the lower school years. Pupils in different study programmes or school years have different curricula, which should be taken into account in considering achievement levels.

Figure 2.2 allows comparison between the previously-discussed average gender gaps computed by a simple linear regression models, and average gender gaps computed by multilevel models that control for school year and streaming in schools. The gender differences relating to streaming and falling behind in school tend to favour females when measuring the average gender gap. When controlling for school year and streaming, female advantage diminishes as the male lead increases. Thus, the poorer overall male performance in **reading** is less visible in classrooms and schools. However, girls' advantage in reading remains present in schools and the gender gap, even when controlling for school year and streaming, is statistically significant in favour of females in all countries except the German-speaking Community of Belgium.

Similarly, in **mathematics and science**, the small average gender gap might be partly explained by the tendency of females to participate in higher-level school programmes or streams than their male counterparts. Within individual schools, however, much larger differences are observed. In fact, in the same schools, streams and programmes females tend to perform at a lower level in mathematics and science than males. Controlling for the school year and stream attended, there was a significant gender gap found in mathematics in all European countries except Iceland and Liechtenstein. The difference amounted to about one third of the international standard deviation in Hungary, the German-speaking Community of Belgium, Germany, Austria and Portugal. In science, the gender gap within the schools is the least pronounced, although significant in all countries, except Latvia, Lithuania, Finland, Sweden, the United Kingdom (Scotland), Iceland, Liechtenstein, Norway and Turkey.

Figure 2.2: 'Gross' average gender difference (M-F) and 'net' average gender difference, controlling for school year and stream, in scores for reading, mathematics and science for 15 year-old pupils, 2006

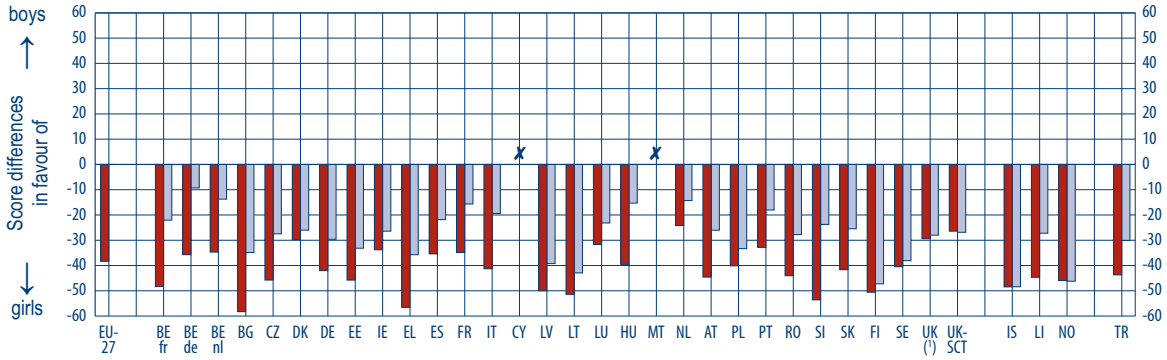
Explanatory notes

Total average gender differences are computed by simple linear regression; average gender differences, controlled for school year and stream are computed by multilevel regression models.

For further information on the PISA survey, see the Glossary.

Values that are statistically significant (p<.05) are indicated in **bold**.

a) READING

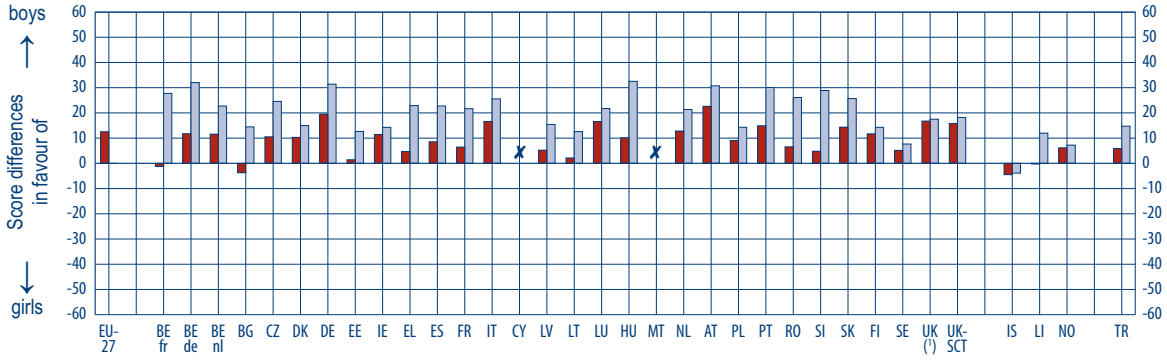


Total | Controlled for school year and stream | ✗ Countries that did not contribute to data collection

	EU-27	BE fr	BE de	BE nl	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU
Total	**-38.36**	**-48.32**	**-35.72**	**-34.70**	**-58.27**	**-45.77**	**-29.80**	**-42.02**	**-45.78**	**-33.77**	**-56.58**	**-35.40**	**-34.86**	**-41.28**	✗	**-49.98**	**-51.42**	**-31.68**
Controlled		**-22.03**	-9.28	**-13.74**	**-34.88**	**-27.47**	**-26.00**	**-29.61**	**-33.16**	**-26.42**	**-35.72**	**-21.85**	**-15.65**	**-19.40**	✗	**-39.24**	**-42.93**	**-23.16**

	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK (1)	UK-SCT		IS	LI	NO	TR
Total	**-39.57**	✗	**-24.15**	**-44.60**	**-40.12**	**-32.84**	**-44.03**	**-53.61**	**-41.65**	**-50.59**	**-40.47**	**-29.41**	**-26.43**		**-48.45**	**-44.69**	**-45.94**	**-43.69**
Controlled	**-15.30**	✗	**-14.30**	**-26.04**	**-33.32**	**-18.03**	**-27.77**	**-23.75**	**-25.44**	**-47.26**	**-38.09**	**-28.00**	**-26.85**		**-48.42**	**-27.23**	**-46.21**	**-30.05**

b) MATHEMATICS

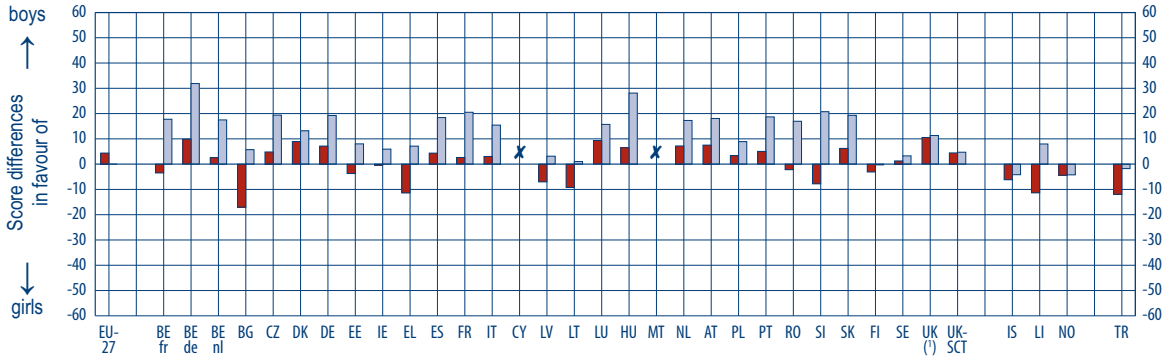


Total | Controlled for school year and stream | ✗ Countries that did not contribute to data collection

	EU-27	BE fr	BE de	BE nl	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU
Total	**12.54**	-1.27	11.77	**11.57**	-3.72	10.52	**10.30**	**19.51**	1.43	**11.46**	4.68	**8.56**	6.45	**16.61**	✗	5.22	2.14	**16.58**
Controlled		**27.74**	**32.02**	**22.72**	**14.46**	**24.56**	**14.97**	**31.40**	**12.65**	**14.27**	**22.89**	**22.75**	**21.68**	**25.56**	✗	**15.43**	**12.59**	**21.71**

	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK (1)	UK-SCT		IS	LI	NO	TR
Total	**10.15**	✗	**12.81**	**22.62**	**9.08**	**14.91**	**6.56**	4.80	**14.34**	**11.71**	5.13	**16.75**	**15.78**		-4.49	-0.26	**6.17**	5.86
Controlled	**32.52**	✗	**21.37**	**30.74**	**14.31**	**30.07**	**26.09**	**28.87**	**25.70**	**14.29**	**7.67**	**17.51**	**18.20**		-3.87	11.97	**7.22**	**14.73**

c) SCIENCE



Total Controlled for school year and stream ✗ Countries that did not contribute to data collection

	EU-27	BE fr	BE de	BE nl	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU
	4.38	-3.48	9.87	2.57	-17.02	4.82	8.93	7.14	-3.72	-0.40	-11.41	4.36	2.64	3.05	✗	-7.02	-9.23	9.34
		17.76	31.87	17.50	5.72	19.39	13.19	19.25	8.02	5.93	7.12	18.42	20.52	15.45	✗	3.15	1.03	15.72

	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK (1)	UK-SCT		IS	LI	NO	TR
	6.48	✗	7.20	7.53	3.38	5.04	-2.19	-7.79	6.23	-3.10	1.28	10.54	4.45		-6.17	-11.36	-4.37	-11.93
	28.11	✗	17.28	18.06	8.91	18.69	16.96	20.74	19.31	-0.29	3.27	11.32	4.72		-4.18	7.98	-4.24	-1.76

UK (1) = UK-ENG/WLS/NIR

Source: OECD, PISA 2006 database.

2.2.2. Relative impact of gender, socio-economic status and immigrant background

It is important to consider gender differences in achievement in the context of other socio-demographic characteristics. Figure 2.3 shows the relative importance of gender, socio-economic status and immigrant background in explaining variation in the reading, mathematics and science achievement of 15-year-olds using PISA 2006 data. Simple linear regression by country was conducted. As the variables are not on the same scale, we are reporting the percentage of explained variance. Analysis of PIRLS data yielded very similar results and is therefore not presented in detail.

Socio-economic status has greater influence than gender and immigrant background in predicting achievement in all three study fields. Controlled for gender and immigrant background, index of economic, social and cultural status explains about 5 - 25 % of variance. It is statistically significant in all countries for the three subjects under discussion.

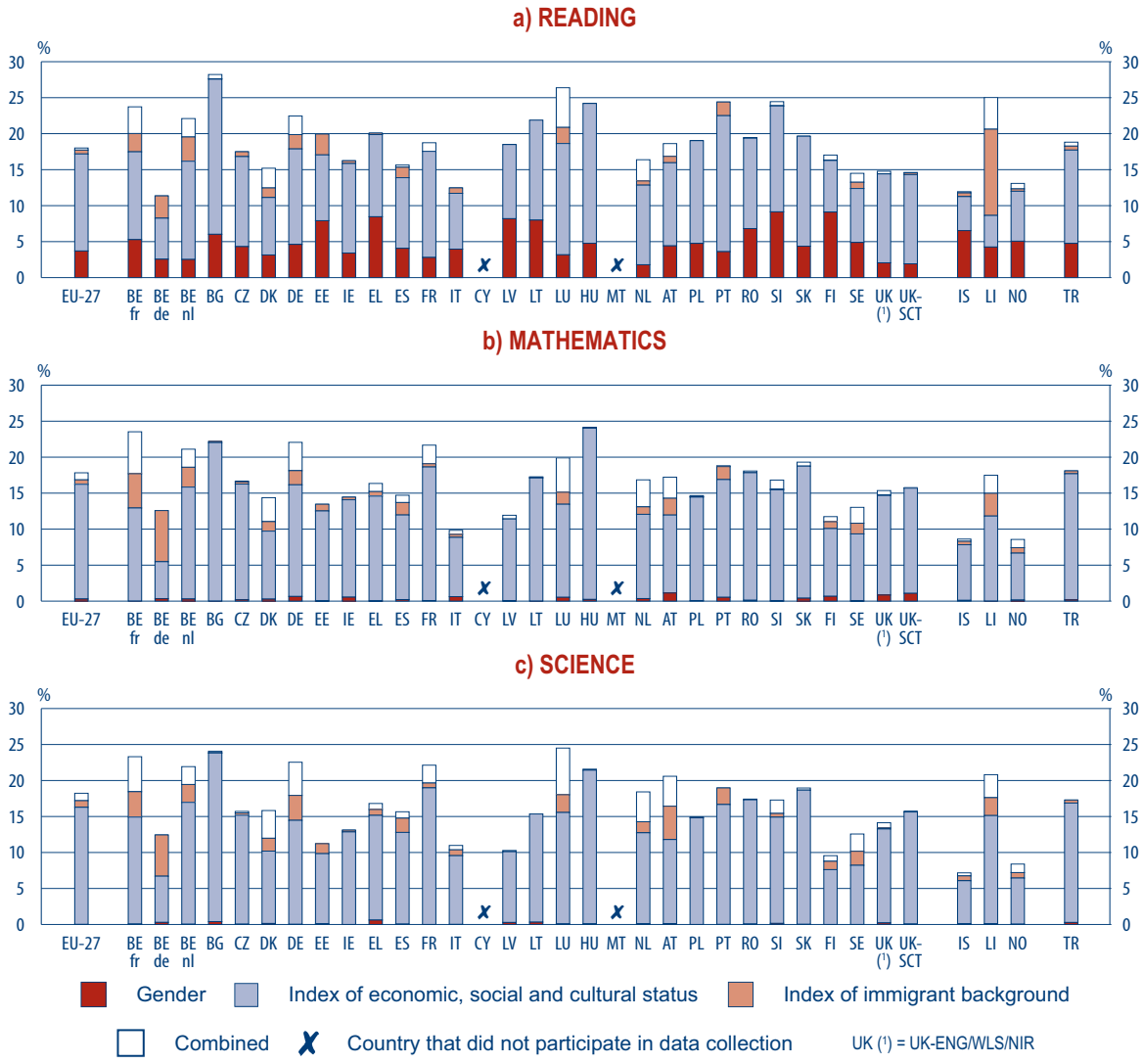
Gender is less important than socio-economic status in predicting achievement. Only in reading is gender statistically significant in all countries (controlled for socio-economic status and immigrant background) and accounts for about 2 - 9 % of total variance. In contrast, in Figures 2.3 b and c showing explained variation in mathematics and science gender is scarcely noticeable since it accounts for a maximum of 1 % of variance and is only present in some countries. Gender is not significant in explaining differences in science achievement in the majority of the European education systems analysed (19 out of 32). Moreover, this is also true in about one third of the analysed education systems (13 out of 32) in explaining differences in mathematics achievement.

Immigrant background, accordingly, has less importance than socio-economic status or gender in predicting reading achievement (0 - 3 %), but has more importance than gender for predicting

achievement in mathematics (0 - 7 %) and science (0 - 6 %). Immigrant background does not have a significant effect in nine education systems in explaining achievement in reading and mathematics. It is also not significant in eight systems for explaining achievement in science.

Figure 2.3 indicates that the interplay between gender, socio-economic background and immigrant status (i.e. combined indexes) explains up to 5 - 7 % of variance. However, it is difficult to single out clear pair-wise interactions. OECD (2009a) showed that, the effect of socio-economic or immigrant background on science performance was the same for both males and females in nearly all countries. Special disadvantaged groups with low attainment amongst males and females are discussed in greater detail in Chapter 5.

Figure 2.3: Percentage of explained variance of reading, mathematics and science achievement by gender, index of economic, social and cultural status, index of immigrant background and combined indexes for 15 year-old pupils, 2006



Source: OECD, PISA 2006 database.

Explanatory notes

The PISA index of economic, social and cultural status was created to capture wider aspects of a student's family and home background in addition to occupational status. It was derived from the following variables: the highest international socio-economic index of occupational status of the father or mother; the index of highest educational level of parents converted into years of schooling and the index of home possessions.

The index of immigrant background was derived from students' responses to questions about whether or not they, their mother and their father were born in the country of assessment or in another country.

The exact data values see in Table 2 in Annexes.

For more details see OECD (2007a). For further information on the PISA survey, see the Glossary.

*

* *

International assessments of student achievement in reading, mathematics and science report some consistent gender patterns. The most visible and clear gender difference is the advantage of girls in reading. This advantage is consistent across countries, different age groups, survey periods and study programmes. In mathematics, boys and girls have similar results in the fourth and eighth year of schooling in most countries. Boys' advantage emerges in the later school years and is especially noticeable among students in the same study programmes/streams and year groups. Gender differences in science achievement are the smallest. Male advantage in science achievement is significant only for those attending the same classes and schools in most countries. Daily observations of the higher performance of boys in mathematics and science lessons might provide information on why girls have lower self-confidence in these areas and are less inclined to choose mathematics, science and technology fields of study at tertiary level.

However, as discussed in Chapter 1, the gender patterns in achievement relate not only to socio-cultural and educational factors, but also to the features of assessment. Varying proportions of constructed-response and multiple-choice items in tests may influence the extent of the gender gap. A greater proportion of questions requiring higher-level competency favours boys in mathematics and girls in reading (Close & Shiel, 2009; Lafontaine & Monseur, 2009). Also, especially in the later years at school, socio-cultural factors such as career and occupational choices and aspirations may influence the performance of boys and girls differently.

Gender is only one of the factors that account for variation in achievement in different subject fields; socio-economic status is a more significant factor. Gender plays only a minor role in explaining the differences in mathematics and science, and only a slightly larger role with respect to reading. In addition, the wide variation in gender gaps among countries suggests that the current differences are the apparently avoidable outcomes of social and cultural differences between young males and females. A key question addressed in the following chapters is, to what extent the gender differences can be redressed by education systems and by specific policies for equal opportunities.

CHAPTER 3: LEGISLATIVE AND POLICY FRAMEWORKS FOR GENDER EQUALITY IN EDUCATION

This chapter outlines existing national legislative and policy frameworks for gender equality in education. Social science research draws attention to the persistence of gender biases in education and the reproduction of gender stereotypes through education, as explained in Chapter 1. Subsequently, Chapter 2 discussed gender patterns in educational attainment, showing relatively small but stable differences between the genders. Based on the above observations, traditional gender roles and stereotypes are still relatively persistent throughout all levels of education. This persistence underlines the importance of developing gender equality policies covering different educational spheres and levels, since they strongly influence the process of students' socialisation and, consequently, their career opportunities.

However, despite the important consequences that gender equality policies may have in education, in many European countries, gender equality seems to be less of an issue for education than for employment. As a result, many gender equality policies in education are in fact answers to equality concerns in employment. Such concerns include job segregation in the labour market and the different career paths of women and men, as well as work-life balance. Nevertheless, gender equality receives at least minimal coverage in education policy in the large majority of countries. Specific concerns are usually raised on the basis of research results or national statistics, or in some cases following the 'PISA shock' (see Chapter 2). These research outcomes are often vigorously discussed in the media, possibly leading to an accelerated policy response.

Two broad categories of **gender equality concerns** can be distinguished: specific to education and of a general scope. These concerns indicate the potential policy directions in European countries (see section 3.2 of this chapter). The first category of concerns is **inherently linked to the purposes and functioning of the education system**. Most commonly, gender equality policies in education target existing differences between girls and boys in both educational attainment and the choice of educational paths. In this regard, approximately one third of the countries specifically concentrate on the underachievement of boys at primary and secondary levels of education (see Chapter 5). In addition, the manifestation of gender stereotypes in teaching material (e.g. in school books, teaching manuals, curricula etc.) as well as their reproduction by the education process and the hidden curriculum are also identified (see Chapters 1 and 4). In higher education, policies most often define the problem of horizontal segregation i.e. the issue that women and men choose different study fields (see Chapter 8). This concern is sometimes coupled with a focus on vertical segregation i.e. on the fact that women are often underrepresented in doctoral studies and among professors.

The second category of concerns is related to **wider gender equality problems** that are also present in the education sector. Although not linked to the main purposes of the education system, these general concerns apply to this specific context. For example, approximately one third of the countries have developed policies targeting issues such as the low proportion of women in managerial or decision-making positions, the gender wage gap and the presence of gender-based harassment in schools.

With respect to these latter concerns, international treaties as well as EU directives and guidelines are important sources of inspiration for national policies. Therefore, these documents often form the basis

of national political commitments. In shaping the national equality agenda, several countries refer to the important role of the United Nations (UN) World Conference on Women in Beijing in 1995 and the UN Convention on the Elimination of all Forms of Discrimination against Women (CEDAW). Concerning EU legislation and other policy instruments, the twelve 2004-2007 accession countries often cite the specific importance of the *acquis communautaire* (i.e. the whole body of EU legislation) in influencing national policy-making in the wider gender equality field. In addition, gender equality related projects are often initiated due to the availability of European funds.

Besides these international and European sources of gender equality policies, different stakeholders in the domestic arena, for example non-governmental organisations (NGOs), can also participate in shaping national policy frameworks. Nevertheless, only a small number of countries acknowledge the role of NGOs in striving for gender equality policies in education. The countries recognising the NGOs' role in policy formation are most often the ones where gender equality policies appeared on the national political agenda relatively recently. Consequently, as will be shown in the next sections, these are also among the countries with somewhat weaker or still developing governmental commitment to the issue of gender equality in education.

The chapter is structured as follows. The first section shows how gender equality is defined in relation to education in different legislative frameworks. The second section then turns to gender equality policies in primary and secondary education, categorising existing policy priorities (gender equality policies in tertiary education are discussed in Chapter 8). Finally, the third section highlights examples of the implementation of the gender mainstreaming strategy.

3.1. Defining gender equality in legislative frameworks

As was shown in Chapter 1, equality and specifically gender equality can be conceived and defined in various ways. Legislative frameworks also differ in the ways they refer to this concept. Gender equality is most often framed in terms of 'equal treatment' or 'equal opportunities' of women and men, while gender equality in the sense of the equality of (educational) outcomes is less frequently the explicit goal of legal statute. As Chapter 1 argued, applying a gender perspective – a process often referred to as 'gender mainstreaming' – when drafting proposals for legislation can be seen as an effective strategy for achieving such gender equality.

Almost all European countries include equality provisions in their constitution and signed international declarations such as the CEDAW convention. In addition, all of them have adopted specific legislation in addition to this minimum safeguard. Three legislative models can be discerned based on the organisation and purpose of such legislative frameworks in education: general equal treatment and equal opportunities, equal treatment and equal opportunities in education, and gender equality in education.

From the organisational perspective, the models show the degree to which gender equality concepts are embedded in legislative frameworks. Firstly, distinctions can be made assuming that the type of legislative provision (i.e. whether it can be classified as basic law, as general anti-discrimination law or as sectoral law specifically related to education) can influence the application of gender equality principles. For example, education acts can deal with the aspects of gender equality that are specific to the domain of education in a more effective way than would be possible through general anti-

discrimination provisions (see for example Walby, 2005). Secondly, distinctions between the models are also made according to practices of reviewing legislation from a gender perspective, since this influences the potential of a gender mainstreaming strategy.

Regarding the purpose or content of gender equality provisions, the models differentiate gender equality legislation whose purpose is the promotion of equal treatment and equal opportunities from those which seek to achieve gender equality as an outcome (i.e. equality before, during and after education). Equal treatment provisions that do not refer explicitly to 'gender' or 'women and men' are not taken into consideration.

The three main models of defining gender equality in legislative frameworks in relation to education are discussed in turn. Nevertheless, it has to be noted beforehand that while there is evidently a link between legislation and policies, having a detailed or comprehensive legal framework is neither a precondition nor a guarantee for having comprehensive gender equality policies in education (see section 3.2).

In the first model of **general equal treatment and equal opportunities**, general anti-discrimination provisions on the equal treatment of and equal opportunities for women and men provide the legal basis for gender equality in education. Anti-discrimination provisions can take the form of a separate anti-discrimination law or can be part of other acts (most typically the Labour Code). Education is usually mentioned – with the exception of Denmark and Italy – as one sector where such specific anti-discrimination provisions exist. Yet, in this model, the goal of gender equality does not form part of sectoral laws such as education statutes. This means that specific education acts – even if they define equality as one of the objectives of education – do not mention the explicit goal of gender equality. Furthermore, although the goal of reviewing and revising laws (not policies or programmes, which are analysed in section 3.2) from a gender perspective can exist, it is not applied thoroughly and systematically in these countries. This model best describes the situation in Belgium (Flemish and French Communities), Denmark, Estonia, Italy, Cyprus, Latvia, Hungary, the Netherlands and Poland. Nevertheless, in the specific case of Latvia, besides anti-discrimination provisions in the Labour Code, in principle, all legislation is reviewed from a gender perspective.

The second model is labelled as **equal treatment and equal opportunities in education**. In this model, besides having specific legislation on equal treatment and equal opportunities for women and men mentioning the education sector, education acts also include specific references to gender with respect to the goals of equal treatment and equal opportunities (or 'equal rights'). Thus, legislation can cover some domain-specific aspects of gender equality. However, under this model, gender equality as a goal of the education system is not framed in terms of outcome. In this case, while education acts aim to ensure equal access to and equal treatment within education for all pupils, they do not include specific provisions on the role of education in counteracting existing inequalities in wider society. There also appears to be a limited revision of legislation from a gender perspective in this case. This model can be found in Greece, Lithuania, Portugal, Romania and Slovakia.

Finally, the third model is the **active promotion of gender equality in education**. In this model, besides the application of specific anti-discrimination provisions in the education sector, gender equality is framed as one of the goals of the education system. Thus, gender equality is not only seen as comprising equal treatment and equal opportunities, but education statutes also usually mention

the goal of achieving **gender equality as an outcome** of education. For example, in the Czech Republic, according to the New Education Act, one of the goals of education is 'the understanding and application of the principle of equality of women and men in society'. Similarly, in Spain, one goal of the Act on Education is the 'promotion of effective equality for men and women'. This third model can be found in the Czech Republic, Germany, Spain, France, Ireland, Luxembourg, Malta, Austria, Slovenia, Finland, Sweden, the United Kingdom, Iceland, Liechtenstein and Norway. The revision of legislation from a gender perspective is undertaken to some degree in all the countries where this model applies (with the exception of the United Kingdom due to its specific legislative practice).

There is a considerable variation among countries in this model:

Firstly, in **Malta, Austria, Finland** and **Liechtenstein**, although gender equality is not laid down as one of the main goals in primary education legislation, it is regarded as one important overarching principle of the compulsory school curriculum. In these countries, the national curriculum forms an important part of the legislative framework for education.

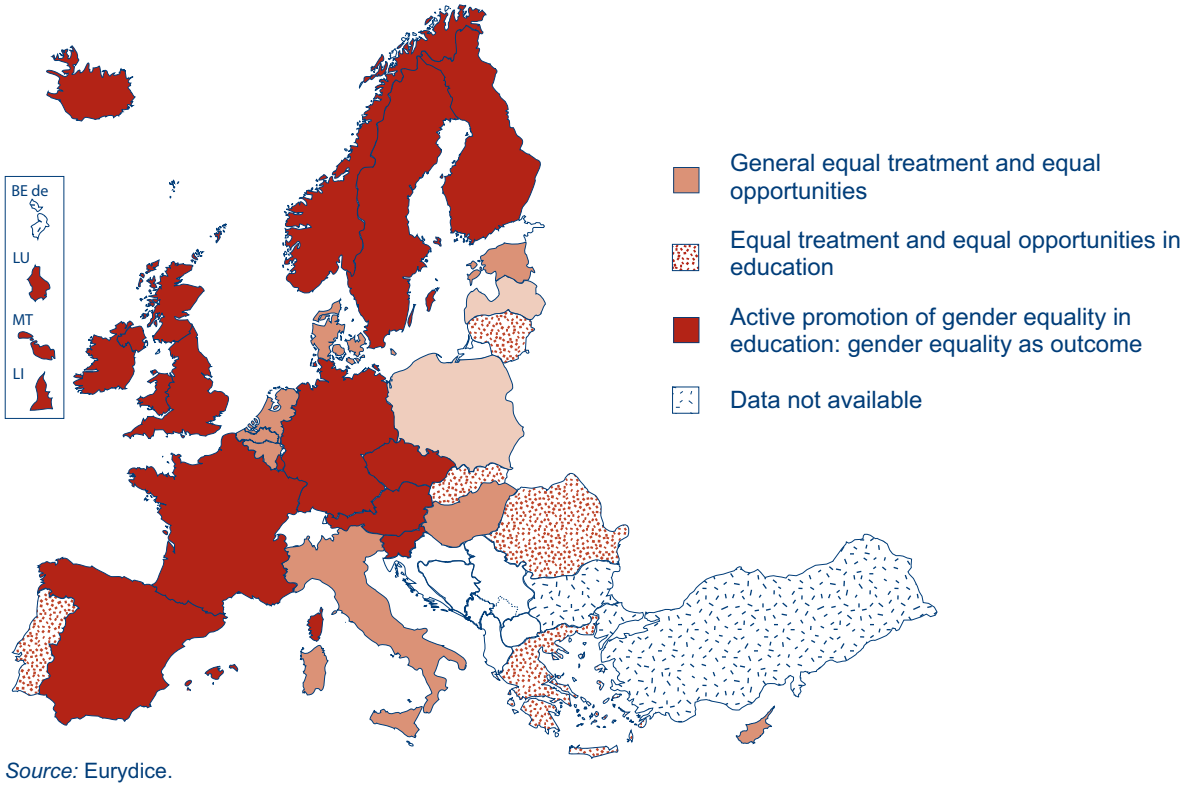
Secondly, in **Slovenia**, while education legislation only includes the principle of equal treatment and equal opportunities, the 1996 White Paper on Education, which contains the main principles of the Slovenian education system, refers to the need to 'shift' the emphasis 'from formal rights and equal opportunities' towards substantive rights and the reproduction of privileges through education.

Thirdly, in the **United Kingdom** (**England, Wales** and **Scotland**), the Gender Equality Duty requires all educational institutions to 'promote and take action to bring about gender equality' (see also below). In **Northern Ireland**, there is a similar Equality Duty promoting equality of opportunity on nine grounds, including gender.

Fourthly, in **Sweden** and **Norway**, the overarching gender equality goal is framed not only in the main education legislation but is also expressed in all curricula from pre-primary to upper secondary education.

Finally, the revision of legislation from a gender perspective is especially emphasised in **Ireland, Spain, France, Finland, Sweden** and **Iceland**.

Figure 3.1: Types of legislative frameworks for gender equality in education, 2008/09



Source: Eurydice.

Additional notes

Germany: The legislative framework varies between the *Länder*.
Cyprus: While gender equality is not expressed as a goal of the education system at present, in a forthcoming reform of the education system, the gender dimension is planned to be integrated in the new public school curriculum (a proposal was adopted in December 2008).
Ireland: Information not verified at national level.
Hungary: Although the Act on Higher Education emphasises the representation of women in decision-making bodies of higher education institutions, it is more accurate to include the country in the model of general equal treatment and equal opportunities, because there is no explicit reference to the equal treatment of women and men either in the Act on Public Education or in the Act on Higher Education.
Latvia, Poland and **Portugal**: There are only provisions in the Labour Code; there is no specific law on equal treatment and equal opportunities.

While these differences in legislative frameworks show how gender equality in education is conceived and framed in various different ways, these frameworks do not necessarily indicate the directions taken by European countries in gender equality policies in education. Nevertheless, legislative frameworks can have an impact on gender equality policies in two important respects. On the negative side, legislation can transform gender equality concepts and can even render them meaningless, which in turn hinders policy action (Stratigaki, 2004). In this sense, gender equality frameworks in legal provisions can be used as an 'alibi' (Stratigaki 2004, p. 36). On the positive side, legislative frameworks have the potential to bring about gender equality policies in education. References to gender equality can signal a political commitment while their absence or non-specificity can indicate a lack of attention paid to the issue.

A potential means by which legislative frameworks can influence policy is that they usually include certain **requirements for governments** (central or regional) to develop gender equality policies or implement certain measures. In Spain, for example, based on the legislative framework, equality plans are developed by the Autonomous Communities.

In several countries, framework laws on equal treatment and equal opportunities identify the obligations on **educational institutions** to develop their **own gender equality policies**.

In the **Flemish Community of Belgium**, developing a gender equality policy is the responsibility of schools, although the government can facilitate this process.

In **Lithuania**, the Law on Equal Opportunities specifies the duty of educational institutions to ensure, within the limits of their competence, that the curricula and textbooks do not propagate discrimination between women and men.

In **Finland**, the act on gender equality obliges educational institutions at upper secondary and tertiary level to draw up an equality plan as a tool for promoting equality issues in the school as a workplace.

In **Sweden**, education providers must establish an equal treatment policy covering all areas of discrimination, including gender. Education providers can be ordered to fulfil these obligations or risk having to pay a fine.

In the **United Kingdom** (**England, Wales** and **Scotland**), the Equality Act 2006 places a statutory duty on all public authorities (including government departments, local authorities and schools) to promote the equality of opportunity between men and women. This duty is known as the Gender Equality Duty and came into force in April 2007.

In **Northern Ireland**, the Northern Ireland Act 1998 imposes a similar duty on public bodies to promote equality on nine grounds, including gender.

The legislative model also provides a good indication of where the main **responsibility for developing gender equality policies** in education might rest. In general, under the first two models, it is usually the general authority for gender equality/equal opportunities – which is often located in ministries of welfare or social affairs – having more responsibility for developing gender-specific policies in education. The exceptions are Cyprus and the Netherlands, where education ministries have a greater role in the development of such policies. In the third model of gender equality in education, on the other hand, it is mainly the ministry of education formulating gender equality priorities in education. Nonetheless, countries implementing a gender mainstreaming strategy usually establish and rely on co-ordination mechanisms between education ministries and gender equality authorities (see section 3.3). Furthermore, in some countries, other ministries or authorities (e.g. health ministries) are also involved in policy-making where it involves specific projects.

3.2. Main aims of gender equality policies in primary and secondary education

With a few exceptions, all European countries have – or at least plan to have – gender equality policies in education. The countries that do not have such policies for primary and secondary education are Estonia, Italy, Hungary, Poland and Slovakia. In Estonia, only equal treatment provisions apply in the education field. In Italy, initiatives on gender equality addressing schools and teachers are put in place at a local level by regional, provincial, or municipal authorities. In Hungary, the development of gender equality policies in education is instigated by the social affairs ministry within a general gender mainstreaming strategic planning framework at national level. Similarly, in Poland and Slovakia, social affairs ministries are mainly responsible for gender equality policies.

The following paragraphs outline the main aims of gender equality policies in primary and secondary education. Gender equality policies in higher education are discussed in Chapter 8.

Education is most often seen as an important means of socialising children and young people and therefore as a realm in which it is especially significant to design policies that aim at achieving greater gender equality. Consequently, the **primary goal** of gender equality policies in education is to challenge **traditional gender roles and stereotypes**. This priority exists in every country where there are gender equality policies in education. For example, in Spain, the education system is expected to contribute to overcoming the stereotyped visions of gender roles and modifying behaviours and attitudes. The main goals of the Act on Education include the promotion of fundamental rights and freedoms and effective equality between men and women, the recognition of sexual diversity, as well as the critical appraisal of inequalities in order to make it possible to overcome sexist attitudes. In Sweden, schools are seen as responsible for counteracting traditional gender roles and for providing pupils with the opportunity of developing their own abilities and interests irrespective of their sexual identity.

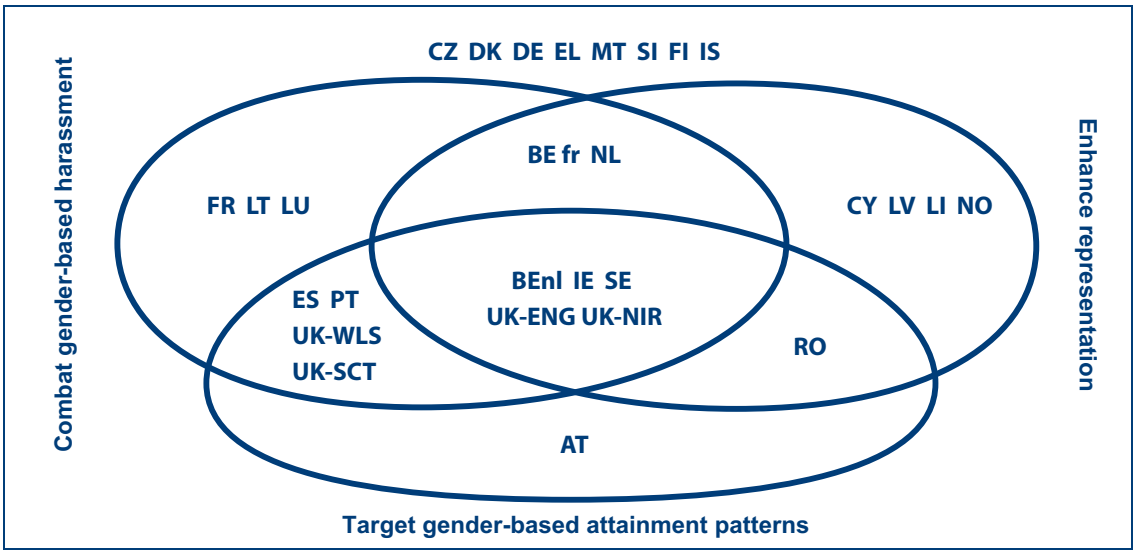
Besides designing appropriate and gender-conscious curricula, a common policy tool in this regard is to provide guidance for pupils, most importantly for girls, to encourage them to choose non-typical vocational training or higher education fields of study (see Chapters 4 and 8). Providing guidance to break down gender-specific barriers to education is also seen as a tool for improving attainment levels and for reducing differences in attainment (see Chapter 5).

Most countries also implement or plan to implement additional measures such as introducing central support for teaching in order to reinforce the goal of transforming traditional gender roles and stereotypes. These tools of pedagogical supervision or steering include guidelines or (centrally supported) projects on gender-sensitive teaching and/or the revision of schoolbooks and other teaching materials to take account of the gender perspective. Even if governments do not want to provide strict guidelines on teacher education or on the use of teaching materials, they may support – financially or by other means – specific training projects or the publishing of gender-sensitive books (for more details and examples, see Chapters 4 and 7). Centralised support measures are planned but not yet put into practice in Cyprus, Lithuania, Portugal, Romania and Finland.

Besides these main educational policy concerns, most countries have additional policy priorities and measures with regard to gender equality in education. Three important priority areas can be distinguished. Firstly, there are policies focusing attention on the hidden curriculum and school climate, mainly to combat **gender-based harassment** in schools. In this case, measures are not gender-neutral but specifically and explicitly target gender-based violence, harassment or bullying (see Chapter 4 for details). Secondly, another policy priority is to enhance the **representation of women** in decision-making bodies in the education sector. Policy tools in this area include, for example, measures to increase the number of female head-teachers or women participating in monitoring or regulatory bodies (see Chapter 7 for details). Finally, a limited number of countries identify the objective of counteracting **gender-based attainment patterns**. As Chapter 1 pointed out, the underachievement of boys in schools is becoming a concern in several countries. As a result, existing projects mainly target boys and only rarely girls. In addition, a few countries focus on specific disadvantaged groups like immigrant boys or Roma girls (for examples, see Chapter 5).

Figure 3.2 shows which policy priorities exist in European countries. A country is included in a category even if these priorities are only envisioned by policy documents (e.g. in governmental strategies, action plans, development plans etc.), even if they are not yet put into practice. For example, the goal of enhancing the representation of women in decision-making bodies or of obtaining a gender balance in education management is part of national strategies in Cyprus and Romania which are yet to be implemented. In Denmark, an action plan adopted in 2009 launches new projects on breaking down gender specific barriers to education among males and females with other ethnic origin than Danish. In Portugal, the current equality plan includes the objective of integrating gender equality perspectives into the organisational functioning of schools and other educational and training institutions in order to prevent violence and guarantee the integration of both sexes into everyday school life.

Figure 3.2: Gender equality policies aiming to challenge traditional gender roles and stereotypes in primary and secondary education, 2008/09



Countries without substantial gender equality policies in education: **EE, IT, HU, PL, SK**

Source: Eurydice.

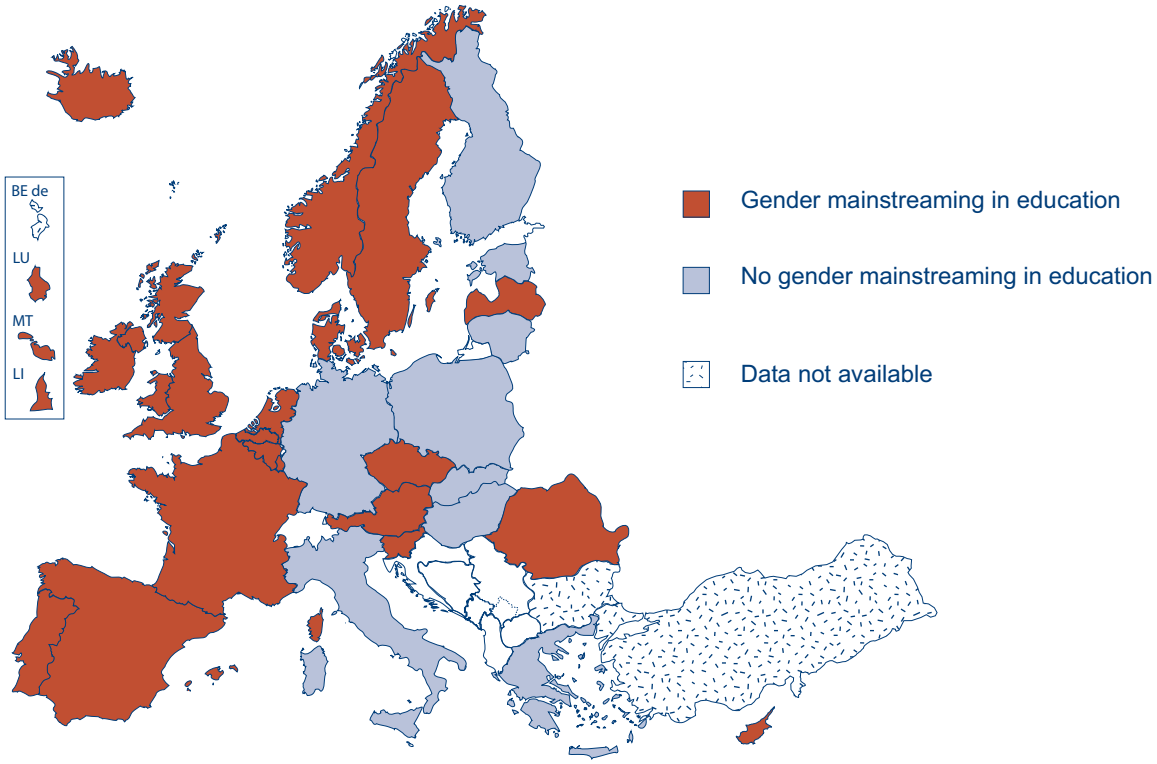
Additional note

Ireland: Information not verified at national level.

3.3. Gender mainstreaming and the monitoring of gender equality policies

Partly because the European Union strongly supports the gender mainstreaming strategy, this concept exists in the policy documents of almost all European countries. This means that it is present at least in the policy rhetoric (see Figure 3.3). The strategy of gender mainstreaming includes 'the (re)organisation, improvement, development and evaluation of policy processes, to ensure that a gender equality perspective is incorporated at all levels and stages of all policies by those normally involved in policy making' (Council of Europe, 2007). Thus, gender mainstreaming is not a policy priority on its own, but is a way to make sure that the general objective of gender equality is taken into account when designing policies and implementing measures. As such, this strategy is strongly linked not only to the development, but also to the implementation, monitoring and evaluation of policy instruments. This section looks at how the gender mainstreaming strategy is applied in the field of education.

Figure 3.3: Gender mainstreaming in education in European countries, 2008/09



Source: Eurydice.

Additional notes

Estonia: Gender mainstreaming exists only in international projects.
Ireland: Information not verified at national level.
Cyprus: While gender mainstreaming is not incorporated into existing education policies, it is one of the main objectives of the current gender equality action plan.
Portugal: Gender mainstreaming is said to be very weak.

Besides using the principle of gender mainstreaming in policy documents, some countries pay special attention to the application of a concrete gender mainstreaming strategy.

In the **Flemish Community of Belgium**, the Flemish Equal Opportunities and Non-discrimination Act, adopted in July 2008, incorporates gender mainstreaming and establishes open co-ordination mechanisms within the Flemish government. Through this, each policy domain has to have its gender action plan.

In **Spain**, gender mainstreaming is one of the governing principles of equality policies. In this framework, there are Gender Equality Units in each ministry.

In **France**, the concept of an integrated approach to gender equality is incorporated and applied in the development and implementation of the 'Conventions', which are run by a national inter-ministerial steering committee.

In **Sweden**, gender mainstreaming as a strategic approach is reflected in school curricula, including the principle that gender equality should not be treated in isolation, but is to be integrated into all subjects.

In **Ireland**, following the enactment of the Education Act and the implementation of the National Development Plan (NDP) 2000-2006, the Department of Education and Science has adopted a gender mainstreaming strategy in the promotion of gender equality throughout the education system. The NDP required that all policies and programmes funded under the plan incorporate the principle of equality of opportunity between men and women and between boys and girls. Therefore, the incorporation of this principle into all policies is no longer an option but an obligation. As far as individual schools are concerned, the Inspectorate of the Department of Education and Science has prepared resource packs for primary and post-primary schools that outline the legislative and policy requirements for schools.

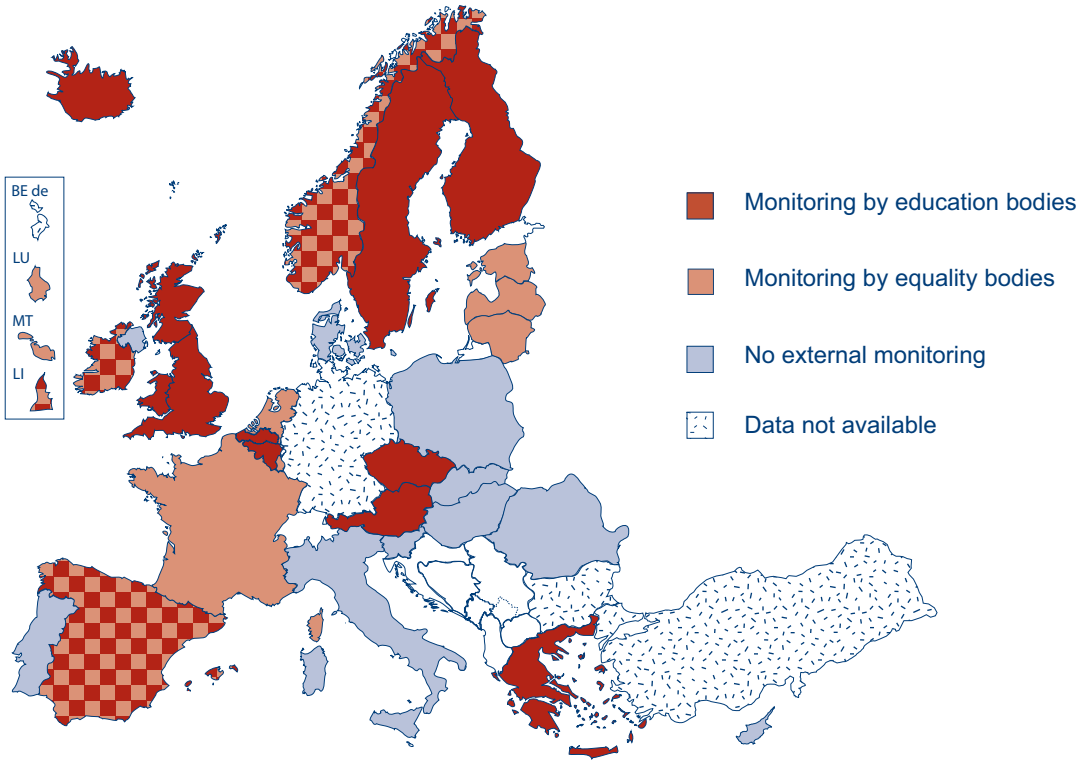
In **Latvia**, the gender mainstreaming approach was chosen instead of separate and targeted gender equality provisions to solve problems of inequality between women and men. Therefore, gender equality principles and regulations should be applied at all levels of policy-making.

In **Austria**, in addition to the establishment of an inter-ministerial committee on Gender Mainstreaming and a National Development Plan *(Aktionsplan)*, there have also been three pilot projects to support the implementation of gender mainstreaming at school level. The first pilot project took place in 2001/02 and focused on gender-sensitive conditions and behaviour in the class. Based on the results, a follow-up project started in 2003. This second project provided supporting measures geared to individual schools and encouraged inter-school networking. Following this, for the school year 2007/08 a Fund for Gender Competence Schools (GeKoS) was set up for 24 schools in order to raise schools' awareness of gender issues, to enhance existing know-how concerning gender aspects and to increase participation in gender-related projects.

With respect to the **monitoring** of the implementation of gender equality policies, European countries rely on two main channels. Firstly, these monitoring mechanisms can be connected to the general gender equality machinery. In other words, it is often the responsibility of equal opportunity authorities to monitor the implementation of gender equality policies in schools. For example, in France, in each regional authority, the Mission for Equal Opportunities between Girls and Boys *(Mission académique pour l'égalité des chances entre les filles et les garçons)* and the Regional Delegation for Women's Rights and Equality *(Délégation régionale aux droits des femmes et à l'égalité)* monitor and assess the implementation in schools. Secondly, monitoring can be the responsibility of education ministries or relevant school inspectorates. For example, in the Flemish Community of Belgium, the school inspectorate monitors the implementation of cross-curricular objectives – such as gender equality – in schools and assesses whether schools are responding effectively.

Figure 3.4 illustrates which countries rely on these available channels, revealing that four countries monitor gender equality policies in schools in multiple ways. For example, in Ireland, while gender equality policies in education are in general monitored and evaluated by the committees responsible for implementation of the National Development Plan and the National Women's Strategy, gender mainstreaming in schools is monitored by the Inspectorate of the Department of Education.

Figure 3.4: Channels for monitoring the implementation of gender equality policies in education, 2008/09



Source: Eurydice.

Additional notes

Ireland: Information not verified at national level.
United Kingdom: Public institutions must establish systems to monitor the impact of their policies on gender equality.

*

* *

In sum, most European countries are concerned about gender inequalities in education. However, the extent of legislative and policy frameworks differs widely, ranging from no policy action to a broad definition of problems. Moreover, while countries have implemented various different policy instruments, more general strategies are often lacking. In particular, although the goal of providing equal opportunities for women and men exists almost everywhere, fewer countries have identified explicitly the aim of reaching gender equality in terms of outcomes or have successfully implemented the gender mainstreaming strategy in the field of education. Although the list of potential policy measures aiming to challenge traditional gender roles and stereotypes is long, only a limited number of countries have put many of these into action. The next chapters will illustrate how European countries have been relying on concrete policy measures with the goal of targeting gender inequalities in education.

CHAPTER 4: GENDER EQUALITY AND THE ORGANISATION OF SCHOOLS: CURRICULUM, GUIDANCE AND SCHOOL CLIMATE

This chapter deals with diverse aspects of school organisation from a gender perspective. Section 4.1 aims to reveal to what extent gender issues are addressed in official curricula and provides information on how these issues are approached, including whether materials on gender-sensitive teaching are provided for schools and teachers in different European countries. The question whether or not sex education and personal relationships education are included in the curriculum are also covered. Section 4.2 looks at whether any form of gender-sensitive vocational guidance exists in European countries. Section 4.3 considers the extent to which the gender perspective is taken into account in the production and evaluation of school textbooks and teaching materials. Finally, Sections 4.4 and 4.5 explore how European countries approach issues related to school climate and the inclusion of parents in the promotion of gender equality.

4.1. Inclusion of gender in the curriculum

Most countries report that they take gender into account in the curriculum. How, and to what degree the gender perspective is included varies, however, from one country to the next. It is also dependent on decisions made in individual schools and, lastly, by teachers themselves. Where national education policies on gender exist, these also obviously play an important role.

As mentioned in Chapter 3, gender equality is an overarching principle of the curriculum in several countries. This means that the gender perspective should permeate the whole curriculum and should be taken into consideration throughout all subjects and areas. This is particularly mentioned for Malta, Austria, Finland, Sweden, Liechtenstein and Norway.

> In the **Maltese** National Minimum Curriculum, 'gender equality is not a theme that should be treated by the school in isolation or during the teaching of a particular subject. Equality should be an interdisciplinary theme which teachers can develop within the context of their particular subject, confronting prejudice and promoting more gender-inclusive alternatives'.

But countries where the gender perspective is not expressed as an overarching principle also report that issues related to gender are taken into account. Gender is most often dealt with as a topic within subjects or cross-curricular themes, such as social sciences, citizenship education, ethics, history, languages or home economics.

> In **Spain**, the core curriculum for primary education includes the following issues in the area of citizenship education: recognition of gender differences; identification of inequalities between men and women; promotion of equal rights for men and women in the family and social spheres and in the workplace. At lower secondary level, this includes the critical evaluation of social and sexual divisions of work, sexist prejudices and the issue of female poverty.
>
> In **France**, the common knowledge base, which is a summary of 'everything you need to know by the end of compulsory schooling', states that, in primary school, the social and civic skills that all pupils must acquire include 'respect for the opposite sex'. It specifies that they must know how to form and challenge their own opinions and to qualify them (through an awareness of the influence of emotional attachment, prejudice or stereotypes).
>
> The history syllabuses also make a major contribution to combating stereotyping and promoting equality between girls and boys.

In quite a lot of countries schools have, however, substantial autonomy in determining curricular content which goes beyond the compulsory minimum curriculum or common formulated goals (see Eurydice, 2008b). In such cases, teachers and school heads play an important role in determining to what extent the gender perspective is included.

Addressing gender issues is not an explicit aim of the curriculum in Belgium (French Community), Estonia, Italy, Latvia, Hungary, Poland, Portugal, Romania or Slovenia (except for pre-primary education). In Cyprus, the gender dimension will be one of the parameters of the reformed school curriculum.

Although gender is frequently included in curricula as a topic, **gender-sensitive teaching,** as a class management tool, has seemingly only been implemented in about one-third of European countries, and guidelines for schools and/or teachers are not very widespread. They are not always provided by government bodies but, where they do exist, they are often developed by NGOs or at least in collaboration with them.

In the **Flemish Community of Belgium**, a manual (Gen-BaSec) was developed for schools wanting to implement a well-informed gender policy. It covers many educational aspects, with suggestions about steps forward and good practices. It offers advice for teacher-pupil interactions and strategies for gender coaches to make teaching staff more gender-aware. The manual comprises, among other things, an overview of research findings, a game and an inventory of existing tools (DBO, 2008).

In the **Czech Republic**, in 2006, the NGO Open Society published a handbook for teachers and students of faculties of education. It describes the risks of gender stereotyping in various areas of school life (Smetáčková, 2006). Within the project 'Equal opportunities for men and women in educational practices', a manual for teachers at primary and secondary schools 'Gender-Sensitive Education: Where to Start?' was published in 2007 (Babanová & Miškolci, 2007). The project was supported by the European Social Fund and state budget. Both publications are available on-line.

The **Danish** Minister of Gender Equality published a guide to inspire work on gender in nurseries in 2008.

In the resource packs prepared for schools (Equal Measures and eQuality Measures) in **Ireland**, model lessons are included which demonstrate how all subject areas can be inclusive of the perspectives, interests and experiences of both boys and girls.

In **Italy,** the Minister for Equal Opportunities announced in 2008 funding opportunities for projects presented by individual schools at upper secondary level for delivering learning modules about gender differences. The Italian Women Historians Association *(Società Italiana delle Storiche)* also made proposals about teaching history in a gender perspective.

The revised **Lithuanian** Curriculum Framework (2008) for primary and lower secondary education suggests that in developing writing skills 'it is especially important to ensure that the tasks and topics suggested meet the interests of both girls and boys' while in developing reading literacy, 'the teacher should take into consideration different gender-specific reading needs and includes texts proposed by the pupils'.

In **Austria**, there are several brochures and materials available to encourage teachers to provide gender-sensitive teaching which have been developed to implement the educational principle 'Education based on equality between women and men'.

In **Poland,** the 'Towards the Girls' Association developed educational materials for teachers which help them introduce gender equality issues into school education, in particular in lower secondary and upper secondary lyceum-type schools. A handbook 'Equal School – Discrimination-free education' was published in January 2008; it discusses equality issues and offers examples of classes for young people. It is a compendium which contains information, advice, guidelines and exercises for teachers, covering areas such as gender equality and combating discrimination on the grounds of gender.

In **Romania**, the project 'The Gender Dimension in Education' is carried out by the Institute of Education Science in cooperation with UNICEF Romania. In this context, guides were published in 2006 and are available online. They are used in the training programme for the school inspectors who coordinate the training in new teaching methods at county level. In addition, teachers have at their disposal a 'Compendium for the Gender Dimension in Education' which provides a set of specific tools for self-evaluation and evaluation of educational institutions from the gender perspective, as well as a set of indicators for the evaluation of school books from the gender perspective. The compendium also provides a glossary with definitions for a series of basic concepts relating to gender in education.

In **Sweden**, the newly appointed committee for gender equality in schools is to organise seminars and spread information about its results, in particular on methods that can be used to cross and break down traditional gender patterns and gender roles in schools.

In **Finland**, the new guide book for writing the gender equality plans required of upper secondary schools advises how to prepare the plan and how to highlight the importance of developing teaching methods and creating learning environments which will benefit both genders.

In the **United Kingdom** (**England**), the Equality and Human Rights Commission (EHRC) provides guidance for schools on how to implement the Gender Equality Duty. This guidance advises that actions to challenge stereotyping should apply across the curriculum and, in particular, in careers education, work-related learning, citizenship and personal, social and health education at both primary and secondary school. In **Northern Ireland**, the Equality Commission has issued guidance on how teachers and career advisors can break-down gender barriers.

In **Liechtenstein**, the Office of Gender Equality in collaboration with the Office of Education introduced a media package for teachers in 2004 containing gender relevant teaching material and material in order to reflect on (social) role behaviour.

This would suggest that efforts are being made in some countries to include gender and gender equality as a topic or as an inter-disciplinary theme. However, less attention is being paid to the development of suitable gender-specific teaching methods and guidelines which could play an important role in counteracting the gender stereotyping which influences students' interests and learning.

4.1.1. The place of sex education and personal relationships education

Sex education and personal relationships education usually include biological as well as emotional aspects of sexuality such as knowledge of sexual health and responsible sexual behaviour, awareness of different sexual orientations, the processes of human reproduction, contraception, pregnancy and birth. Teaching respect for others, tolerance and making students aware of specific aspects of social behaviour in intimate relationships are also part of these topics. Such aspects not only form part of an education for responsible citizenship but also contribute more particularly to a better understanding of gender issues.

Both areas are included in the curricula of almost all European countries with the exception of Belgium (French Community) and Cyprus.

In the French Community of Belgium, there is no common programme for sex education. It may, however, be included in the school plan and is then binding on the school. In Cyprus, sex education has been introduced as a pilot programme at the 3rd year of *gymnasium* (pupils aged 14) with the intention of introducing it to all public *gymnasia* in the future.

In the United Kingdom (England), sex and relationships education will become a compulsory part of the primary curriculum in 2011.

Figure 4.1: Sex education and personal relationships education in the curriculum, 2008/09

	BE fr	BE de	BE nl	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU	HU
ISCED 1	⊗	:	●	:	●	●	⊗	●	●	●	⊗	●	●	⊗	⊗	●	●	●
ISCED 2			●		●	●	●	●	●	●	●	●	●		●	●	●	●
ISCED 3			●		●	●	●	●	●	●	●	●	●		●	●	●	●

	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK-ENG	UK-WLS	UK-NIR	UK-SCT	IS	LI	NO	TR
ISCED 1	⊗	●	●	●	⊗	●	●	⊗	●	●	⊗	⊗	●	⊗	●	●	●	
ISCED 2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	:
ISCED 3	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

● included : Data not available ⊗ Sex education and personal relationships education are not included in the curriculum

Source: Eurydice.

Additional notes

Ireland: Information not verified at national level.
Slovenia: Sex education is not provided at ISCED 1, but relationships education is.
United Kingdom (ENG/WLS): At primary level, it is for individual schools to determine whether to include sex education in the curriculum. Schools are required to keep a written policy on sex education available for inspection.
United Kingdom (NIR):The figure reflects the revised curriculum, being introduced over a three-year period from 2007/08. Until this is implemented, it is for individual schools to determine whether to include sex education in the curriculum. Schools are required to keep a written policy on sex education available for inspection.

More than half of the countries provide sex education and personal and relationships education in the curricula of all three levels (primary, lower and upper secondary) although not always on a compulsory basis. In the remaining countries, the topics are only dealt with at ISCED levels 2 and 3. Most often these topics are taught as part of biology and health education. Similarly to the topic of gender in general, also sex education and personal relationships education are, in addition, often included in courses on civic/moral or social education or are embedded as cross-curricular themes. In Poland, sex education will be introduced as a separate subject in lower secondary education as of the 2009/10 school year.

Sex education focusing on the biological aspects is usually compulsory. In the United Kingdom, parents have the right to withdraw their children from all or part of any sex education provided, except the biological aspects of human growth and reproduction. The situation is similar in Poland.

In the **United Kingdom** (**England**), in 2008, the Government announced its intention to make sex and relationship education a compulsory part of the primary curriculum. The change, to be implemented from 2011, is intended to improve the quality and consistency of sex and relationship education in primary schools; this is currently subject to government guidance but is non-statutory. The right of parents to withdraw their children from sex education, exercised only by a very small number of families, will be maintained, but will no longer apply to 15-year-olds in the final year of compulsory education.

Sex education and personal relationships education seem to be topics relatively well represented in European curricula. Curricular objectives or attainment targets in most countries are quite precise as far as the subject content is concerned. However, exactly what is taught also depends on the teaching material used which, in many countries, schools/teachers may choose themselves. There are initiatives in some countries at central level to provide specific teaching materials on these topics.

In **Ireland**, a teaching resource published in 2009, *Talking Relationships, Understanding Sexuality* for students aged 15 to 18, has been developed through a partnership between the Department of Education and Science, the Health Service Executive and the Crisis Pregnancy Agency.

In **France**, a document on sex education was drafted by the Ministry as teaching material for teachers and disseminated in 2008; it is a guide for use in lower and upper secondary schools.

In the **Netherlands**, teaching materials about sex education have been developed for pupils in primary schools with a subsidy from the Ministry of Education, Culture and Science.

The **Norwegian** Directorate for Education and Training is currently developing a guidance document to help teachers how to plan and conduct sex education in accordance with the curriculum and best practice.

Some countries (Italy, Hungary and Slovenia) report that quite a high degree of freedom to choose materials and methods, coupled with an absence of good national support material, contribute to the fact that these topics continue to be taught in a less than effective way. The non-compulsory character of many subjects which deal with certain aspects of sex education and personal relationships education may also play a part in this respect.

4.2. Challenging traditional career choices through vocational guidance

School leaver destination statistics in Europe show that many young people still opt for gender-stereotyped career choices (see the section on horizontal segregation in Chapter 8).

The proportion of boys and girls enrolled in compulsory education and even in upper secondary education is about equal in many countries. However, large differences emerge regarding the types of schools or education programmes attended by boys and girls when there is a possibility of choice. Male enrolment rates in vocational streams are universally higher (see EACEA/Eurydice 2009a, Figure C9).

The distribution of students according to occupation in vocational schools and by subject area in general secondary education generally mirrors traditional gender roles.

In **Belgium** (**Flemish Community**), in artistic secondary education, almost two out of three pupils are female and this trend seems to be on the increase.

A recent **Spanish** report shows that in intermediate vocational training, there are some pathways that are exclusively feminine, such as the ones related to health, body image and the textile sector, with a feminine presence of more than 90 %. On the contrary, other vocational pathways related to the automotive sector, electronics or computing reach a masculine presence of 80 % (IFIIE & Instituto de la Mujer, 2009).

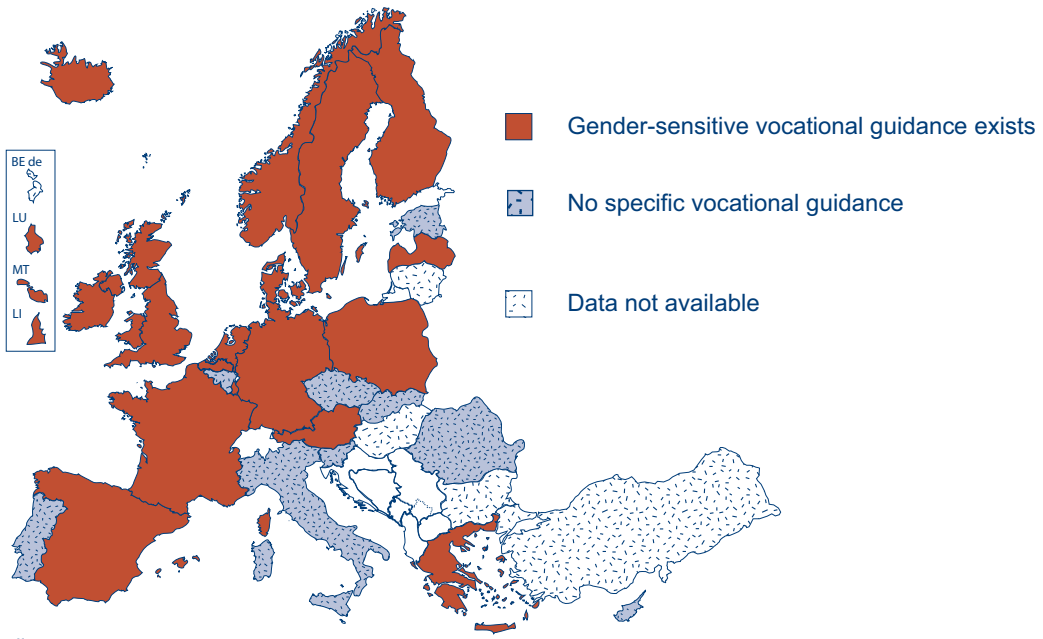
In **France,** there are very high percentages (about 95 %) of girls in such specialities as flexible materials, secretarial/ office systems, health and social care and hairdressing/beauty/personal services, and very low (less than 7 %) in civil engineering/building/carpentry and engineering (mechanical/electrical/electronic). Between 2000 and 2007, the balance has tended to improve, but slowly (DEPP/DVE 2008, p. 39).

In **Italy,** girls outnumber boys in academic secondary schools, especially in pedagogic and social science courses (85 %) and in art schools (67 %), but boys predominate in technical schools (65.8 %) (2006/07; ISTAT, 2009).

A recent **Swedish** report from the Equality survey (SOU, 2005) shows that only 25 % of all courses at ISCED level 3 have an equal gender balance, e.g. the distribution between men and women lies within the range of 40 to 60 %. Only 3 of the 17 national programmes can be said to have an equal gender distribution (not more than 60 % of students are from one sex).

It has been argued therefore, that there is a need for vocational guidance to address specific gender-related career choices and that careers advisers need to be more gender aware, and thus more able to challenge the stereotyping which exists in school cultures and among students and employers.

Figure 4.2: Specific vocational guidance to challenge traditional career choices available in Europe, 2008/09



Source: Eurydice.

Additional note

Ireland: Information not verified at national level.

High on the political agenda of gender equality policies in many countries (see Chapter 3), gender-sensitive guidance is currently only available in half of the European countries. In the remaining countries, although provisions for general vocational guidance exist, they do not necessarily take into account the gender perspective.

Gender-sensitive guidance is available primarily at lower and upper secondary level; this is also true for vocational guidance in general in the majority of countries (see EACEA/Eurydice, 2009c).

In general, gender-sensitive guidance initiatives are targeted far more often at girls than boys. Often the projects in place are small-scale. The purpose is to break traditional gender patterns and help girls choose, in particular, technology and natural science-oriented professions and educational pathways. Some countries (Belgium (Flemish Community), Germany, Luxembourg, Austria and Poland) organise, in this context 'girls' days where companies and research institutions invite girls for visits to introduce them to technical jobs and careers which they traditionally do not take into consideration. They are accompanied by mentors who inform them about entry requirements and/or courses of study.

In **Ireland**, there is a series of initiatives to promote the take-up by girls of non-traditional subjects and to choose non-traditional careers. There are action-research projects in schools (Girls into Technology, Physics/Chemistry Project) and a video was made for students to encourage them to consider careers in science, engineering and technology (SET) areas. It included interviews with young women who had chosen careers in SET areas and highlighted the variety of interesting and exciting careers available in these sectors. A DVD included in 'eQuality Measures' includes a section for guidance counsellors and for students.

In the **Netherlands**, attention is paid to encourage girls to choose technical education and professions. An important contribution is made by the programme *Meisjes en Techniek* ('girls and technology') which is carried out by *Platform Bèta Techniek* and is subsidised by the Ministry of Education, Culture and Science. This programme involves about 30 % of secondary and vocational schools.

In **Austria**, the initiative *MUT! – Mädchen und Technik* ('Courage! – Girls and technology') aims at increasing the share of women in non-traditional occupations and focuses on gender-sensitive vocational orientation. MUT addresses mainly girls in lower secondary schools who are deciding on the type of school they will attend from age 14 or who are thinking about starting an apprenticeship.

In **Sweden,** a special state grant to municipalities is intended to provide summer courses in technology for girls in order to help them opt for technical education. Priority goes to summer courses which put natural science and technology into a wider perspective (cultural, societal, environmental and historical).

The **Norwegian** Action Plan for Gender Equality in early childhood education and care and basic education 2008-2010 has, as one of its priorities, an improved balance between the sexes regarding the choice of studies and occupation, particularly focusing on vocational education and training as well as recruiting girls into science studies.

In **France**, at the *carrefour des metiers* ('careers forum'), many second-level schools, in cooperation with Information and Careers Centres and with the involvement of many professional partners, organise information events for pupils and their families on careers and the courses leading up to them. The associations, whose activities focus on encouraging women to pursue careers in science or to attend the *grandes écoles*, are keen to take part in these events.

Projects referring in particular to female role models exist in Belgium (Flemish Community), Spain, Ireland, Malta, the Netherlands, Sweden and the United Kingdom (Scotland).

In comparison, initiatives to encourage boys to consider non-traditional careers are less common.

> In **Ireland**, a programme specifically for boys *Exploring Masculinities*, which addresses social and personal issues as well as issues around subjects and careers, was developed by the Department of Education and Science for male students aged 15-18.
>
> In **Malta**, since 2006 the Gender Equality Unit at the Employment and Training Corporation has been working with the Education Division to identify area secondary schools, whose 4th form students could benefit from assertiveness, empowerment, self-esteem and gender equality training. Each training session was delivered to a boys' and girls' school together. This included team-building and motivational games, discussions, role-plays and role models who shared their life and work experiences with the students. Furthermore, the Employment and Training Corporation together with the Drama Unit of the Curriculum Management Department developed a DVD of plays depicting real-life situations related to gender and work.

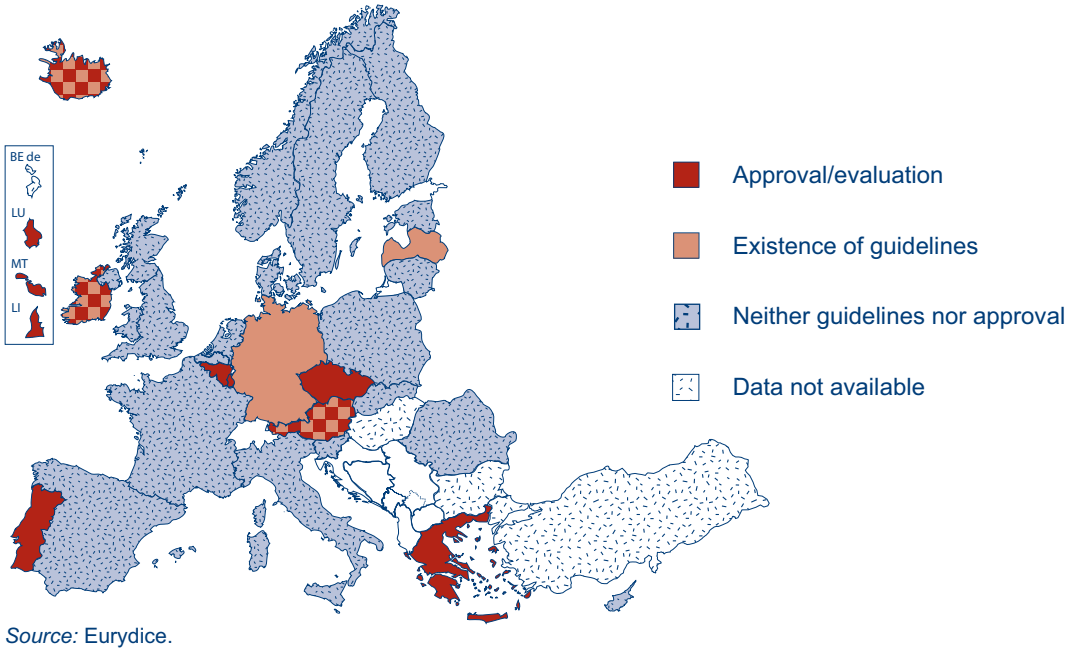
Guidance manuals for vocational guidance professionals in the education sector including the gender perspective are available in the Czech Republic, Spain, Ireland and Malta. In Norway, a project is currently mapping the attitudes of guidance counsellors towards gender roles and non-traditional educational and occupational choices.

Although interesting individual initiatives and projects exist in this context in numerous European countries, most of them are lacking an overall national strategy to combat gender stereotypes in career choices and to support young people at school with systematic guidance on gender-sensitivity for study and career. There also seems to be a shortage of initiatives specifically aimed at boys.

4.3. Evaluation of school books and teaching materials

As mentioned in Chapter 1, the nature of school books and educational reading material, the images and language conveyed with respect to gender is highly influential on children and on the development of their gender identities.

Figure 4.3: Existence of specific guidelines on gender issues for authors of educational texts and teaching materials and approval/evaluation of school books from a gender perspective, 2008/09



Source: Eurydice.

Additional note

Ireland: Information not verified at national level.

Official guidelines on gender issues for authors of educational texts and teaching material exist only in very few countries, namely Germany, Ireland, Latvia, Austria and Iceland. Similarly, only a few countries require school books to be evaluated or approved, although these are not necessarily the same countries. This fact is also linked in certain countries to a high level of school and teacher autonomy in the choice of teaching material (see Eurydice, 2008b) and an equally high degree of liberty given to school book publishers.

> In the **United Kingdom** (**England**, **Wales** and **Northern Ireland**), teaching materials are not subject to approval by the education authorities; they are selected by schools, which make their decisions within the framework of gender equality legislation.

Although many countries do not have guidelines for authors and do not officially evaluate teaching materials from a gender perspective, there is generally a recommendation to authors and publishing houses that their products should comply with the aims of curricula or equality policies. These aims explicitly include gender equality or a more general principle of equality in many countries (see Chapter 3).

Pedagogical supervision focusing on the production of gender-sensitive teaching material is currently the subject of national action plans in several countries (Cyprus, Lithuania, Portugal and Romania).

In some countries, guidelines on gender awareness for school book authors are also produced by NGOs or within the framework of European projects. This has been the case in Spain, Italy, Poland, Portugal and Romania.

In several countries, school books are not evaluated systematically by education authorities; specific ad-hoc evaluations are, however, carried out.

> The **Swedish** National Agency for Education has conducted some evaluations of educational material. In May 2005, the Government gave the Agency the task of evaluating a number of teaching materials intended for schools at ISCED levels 1, 2 and 3 to see how matters such as gender, ethnic belonging, religion or beliefs, sexual orientation and disability were presented. Some 24 books in biology/natural science, history, religion and social science were analysed. Regarding gender, the authors concluded that boys and men are overrepresented in educational material, even though most of the materials are permeated by an equality discourse. They also concluded that gender issues are in many cases discussed in separate sections or chapter, rather than integrated in the text as a whole (Skolverket, 2006b).

The evaluation of school books with respect to gender is frequently the subject of academic research. Such critical analyses of school books have been reported by the Flemish Community of Belgium, Germany, Estonia, Greece, France, Hungary, Lithuania, Latvia, Austria, Poland and Slovenia.

In certain cases research on teaching material has been contracted by government authorities, though not necessarily by ministries of education.

> The **French** Equal Opportunities and Anti-Discrimination Commission published, in 2008, the study '*The Existence of Stereotypes and Discrimination in School Textbooks*' drafted by the University of Metz.
>
> The Ministry of Welfare in **Latvia** commissioned an analysis of gender-sensitivity in textbooks in 2005 and 2006.

Overall, results of such investigations show, in general, a situation which is far from satisfactory. Women and men continue to be treated differently in many school books in European countries. Men are still more often represented than women; vocabulary is in contradiction with the principle of gender equality, the main characters are mostly male, women depicted have largely typically female jobs and are generally missing from the political and intellectual arena. Textbooks show stereotyped images of men and women and few can be said to tackle stereotypes or balance the representation of men and women, as various research projects have shown.

Explicit guidance material for developing non-sexist school books and regular evaluation of teaching material could certainly be helpful in eliminating such gender insensibilities.

4.4. The hidden curriculum: gender equality policies on school climate, gender-based violence and harassment

School climate – relationships between pupils, teachers and pupils, levels of bullying and harassment – constitutes an important part of the hidden curriculum and, as such, shapes gender relations and the opportunities of girls and boys (see Chapter 1). Accordingly, as Chapter 3 showed, one priority of gender equality policies in education is to combat gender-based violence and harassment in schools. However, whilst general policies against bullying and violence in schools exist in many countries, these are typically framed in a gender-neutral way. Initiatives in this area are often taken at school level, for example by employing social workers or educational counsellors and by developing codes of good conduct. In addition, although countries with anti-discrimination provisions in the field of education have rules against sexual harassment in schools, specific policies or projects targeting gender-based violence are rare.

Nevertheless, based on the view that the education system is an appropriate context where attitudes and values can be fostered with the intention of preventing violence and encourage peaceful conflict resolution, some countries pay special attention to tackling gender-based harassment in schools.

Research projects on school climate and violence – which might form the basis of political concerns – produce mixed results. In 2005/06, the Austrian Federal Ministry for Education and Arts commissioned comprehensive studies on the emotional state of school children in years 4 to 12, which showed that girls enjoyed going to school more than boys and were involved in fewer conflicts (especially in lower years) but, at the same time, girls also expressed higher degrees of school phobia (Eder, 2007). In Estonia, a study was made in 2005/06 about adolescents' understanding of violence and aggression at school. The study showed that girls and boys use different types of violence and talk about violence in different ways, with boys using more physical aggression and girls using verbal abuse and psychological bullying. Physical violence was seen as a part of boys' culture (Strömpl et al., 2007). A Lithuanian survey indicates that boys suffer from bullying and are being ridiculed in schools more often than girls (Zaborskis et al., 2005).

Very few countries have established the prevention of violence and harassment as an important priority or general principle of the education system. There are a few countries, however, where targeting gender-based violence is a general priority for schools. In some cases, for example in France, violence towards girls is specifically mentioned.

> The **Spanish** education system includes, within its quality principles, the elimination of any obstacles that restrict full equality for men and women and the development of students' capacity to acquire the skills to allow them to resolve conflicts peacefully.
>
> In **France**, the priority measures for the 2008/09 school year include that 'in schools, special importance must be given to measures designed to prevent attacks on the physical integrity and dignity of human beings: racist and anti-Semitic violence, violence towards girls and harassment related to sexual orientation, especially homophobia'.
>
> In the **United Kingdom** (**England**), the Equal and Human Rights Commission (EHRC) provides guidance for schools on the Gender Equality Duty. It outlines ways in which they can take steps to address sexist and sexual bullying, tackle sexual harassment and challenge attitudes to violence in schools. For example, to address sexist and sexual bullying,

schools may decide to adapt their anti-bullying policies to refer explicitly to sexism and to define sexual bullying; work with pupils to develop school policies to promote an atmosphere free of intimidation; or explore gender stereotyping in the curriculum.

However, most other countries that address the issue of gender-based violence and harassment in education rely on more specific initiatives and projects without having this issue as a general priority.

In the **French Community of Belgium**, since 2001, specific activities have targeted at young people, with a view to preventing violence between young couples. Brochures, posters and CDs have been distributed and a website to raise awareness and prevent violence has been set up and running since 2008 ([1]).

In the **Flemish Community of Belgium**, under the Federal Act of 11 June 2002 regarding the Protection against Violence, Harassment and Unwanted Sexual Behaviour at Work, schools must have the required personnel management policies in place. In addition, the non-profit organization 'Limits' and the Ministry of Education and Training developed a policy for the prevention and combating of violence, harassment and unwanted sexual behaviour at school.

In **Spain**, the Institute for Teacher Education, Educational Research and Innovation (IFIIE) on behalf of the Ministry of Education and in collaboration with the Ministry of Equality, grants the award *Irene: la paz empieza en casa* ('Irene: Peace Begins at Home') every year. This award is aimed at encouraging preventive measures and promoting equality-based education as well as peaceful conflict resolution and the rejection of any kind of violence. It is targeted at schools and rewards those educational practices and projects which promote respect between men and women and the prevention of gender-based violence.

The **Dutch** Ministry for Education, Culture and Science asked the National Centre for School Improvement to set up the Centre for School and Safety ([2]). The Centre collects and disseminates information on safety at school and advises school managers, teachers, counsellors, tutors, mentors, supporting staff, etc. The Centre focuses on social safety and project themes include, amongst others, aggression, violence, sexual and gay harassment.

In **Poland**, the project 'Girls and Boys: With No Fear, No Prejudice, No Violence' was financed by the Ministry of Labour and Social Policy and was implemented in 2006 by the 'Towards the Girls' Association. As a result of the project, a set of scenarios was developed for equality lessons in lower secondary and upper secondary lyceum-type schools which cover issues such as conflicts, managing difficult emotions, communication, stereotypes and peer violence.

In **Portugal**, the current equality plan includes the objective of integrating gender equality perspectives into the organization of schools in order to prevent violence and guarantee the integration of both sexes into everyday school life. In addition, in 2008/09, the National Campaign against Domestic Violence, launched by CIG (Committee for Citizenship and Gender Equality), is focusing on the issue of the prevention of violence in relationships and is targeting young people and adolescents, with most of its material and initiatives being aimed at schools. As part of this campaign, the CIG and General Directorate for Innovation and Curricular Development in the Ministry of Education are promoting a competition *A minha escola pela não violência* ('No Violence in my School') aimed at pupils in the 3rd cycle of compulsory and upper secondary education. The competition aims to involve students themselves in producing awareness-raising materials and initiatives to help spread information to combat all forms of violence within intimate relationships, with particular emphasis on gender-based violence.

([1]) See: http://www.aimesansviolence.be

([2]) See: http://www.schoolenveiligheid.nl/aps/school%20en%20veiligheid

In the **United Kingdom** (**England**), the charity WOMANKIND works with schools to identify sexual bullying in the school environment, define it in school practices, raise awareness across the school and work on strategies to prevent it.

A few policy measures specifically target violence towards girls or women, thus assuming that women are the principal victims of violence. France pays specific attention to one particular group: immigrant girls.

In **Spain**, the Institute for Women and the IFIIE, as well as the equality bodies in the Autonomous Communities, have published several materials specially dedicated to the prevention of violence against women. Such publications stress the importance of questioning traditional meanings ascribed to male and female values and the importance of appraising sexual differences as something positive. These publications focus on the analysis of educational practices directly or indirectly related to violent attitudes.

In **France**, the 2006 Convention, under the heading 'Preventing and Combating Sexist Violence', mentions the need to 'provide information on the specific violence suffered by immigrant girls, such as arranged marriages and sexual mutilation'. The Convention includes the following measures in order to prevent sexist violence: producing records of bullying or harassment suffered by girls in all educational establishments, incorporating a ban on all sexist behaviour into school rules, developing, from the earliest age, tools to promote mutual respect between the sexes, introducing widespread sex-education sessions, addressing, as a matter of urgency, the issue of mutual respect between the sexes and the prevention of sexist or sexual violence, providing information on specific types of violence suffered by immigrant girls, for example, through arranged marriages and sexual mutilation, stepping up the fight against sexual harassment, and combating all forms of ritual or permanent sexist or sexual hazing.

On the other hand, specific initiatives can focus on boys as potential perpetrators of violence, though not necessarily only towards girls.

In the **United Kingdom** (**Scotland**), the government has established the initiative 'Better Behaviour – Better Learning', which has opened a national debate as to how teachers can ensure the optimum behaviour of young people to enable them to benefit from their learning in the classroom. Suggested strategies deal with a range of issues ranging from the prevention of low-level disruption in class to the provision for pupils experiencing severe disaffection and/or social, emotional and behavioural difficulties. Many of these strategies focus on the behaviour of boys.

In conclusion, most policies regarding the hidden curriculum and school climate have the goal of combating gender-based violence in schools. Nevertheless, only a small number of countries have this aim as a general priority; most countries rely on individual or more specific initiatives. As far as the framing of such initiatives is concerned, 'gender-based violence and harassment' is usually described in general terms; where the victims of such violence are mentioned specifically, it is usually assumed that girls or women are the primary victims of aggression.

4.5. Raising awareness among parents of gender equality issues

As Chapter 1 argued, the support of parents is vital in the promotion of gender equality in schools. However, most countries do not have specific government initiatives for making parents aware of gender equality issues, or when they do, they lack effective channels of dissemination. In certain cases, research institutions or non-governmental organisations might initiate specific awareness raising-projects, but these often remain isolated one-off events. Alternatively, in other cases, it is completely up to schools to decide whether and how they want to involve and inform parents in gender equality related matters.

Nevertheless, government attention is often seen as essential because teachers themselves may not be aware of gender equality issues and the importance of involving parents in this matter. According to a Polish research project, relations between teachers and parents are a major problem in Poland with teachers often unable to establish the effective relations with parents that could support child-rearing. In particular, teachers are not trained in gender equality issues, and therefore are not in a position to give parents any meaningful advice in this area (Lalak, 2008).

However, some countries do pay attention to parental involvement in promoting gender equality in education.

In **Spain**, all measures aimed at improving coexistence at school, and especially those related to gender, include families in information provision, awareness-raising and decision-making activities. The Institute for Women and the *Confederación Española de Asociaciones de Padres y Madres de Alumnos y Alumnas* (Spanish Confederation of Associations of Students Fathers and Mothers) have signed a specific collaboration agreement for the implementation of activities promoting the participation of parents in initiatives aimed at achieving equal opportunities in education.

In **Portugal**, one of the two proposed strategic objectives of the current equality plan is to promote the integration of the gender dimension into the training and professional qualification of the various stakeholders in education and training. The goal of 'raising awareness through parents' associations' is explicitly mentioned as one of the measures.

In the countries that do have initiatives on parental involvement, a typical practice is for ministries to publish information materials for parents on gender equality.

In **Belgium** (**Flemish Community**), the ministry publishes a monthly magazine and a digital newsletter *(Klasse voor ouders)* for parents, , and hosts a website for parents. These media channels frequently bring gender topics to parents' attention.

In **Denmark**, in 2008, the Ministry of Gender Equality published two children's books that are meant as starting points for a discussion with children about gender roles. In addition, in 2009, the Minister will resend materials to pupils, teachers, parents and councillors in elder classes of Danish primary schools, which explain how they can contribute to giving pupils broader options after compulsory school and, in this way, help to break down the gender-orientated choices of education ([3]).

([3]) See http://www.lige-frem.dk

In **Ireland**, the resource packs *Equal Measures* and *eQuality Measure*s contain booklets for parents to provide information on equality legislation (national and EU); to increase awareness of gender stereotyping and its consequences for boys and girls; and to provide practical guidelines for parents on how they can contribute to a gender mainstreaming strategy in their children's schools. The DVDs that accompany the packs contain interviews with parents and awareness raising activities.

In addition, information campaigns are organised for pupils and their families and parents are often involved in or informed about certain subjects, most typically sex education.

In **France**, the 2006 Convention states that avoiding sexual determinism of careers 'implies directing young people, pupils and students, as well as parents, the whole educational community and occupational groups, to ensure that the information given out on course subjects and careers encourages girls and boys to follow new paths'.

In **Portugal**, parents are involved in health education, which covers topics such as sexuality, violence in school, diet and physical activity, psychoactive substances and sexually transmitted infections.

In **Liechtenstein**, curriculum regulations require teachers to inform parents when sex education is to be provided.

Finally, parents can be involved in improving the achievement levels of their children, in particular that of their sons (see also Chapter 5).

In the **United Kingdom** (**Scotland**), in some primary schools, there have been efforts to raise parental awareness of, in particular, their son's under-achievement. Schools have also tried to involve fathers more in areas such as reading at home, this strategy hopefully increasing male role model possibilities for the child. In 2008, the **Welsh** Assembly Government launched a campaign to improve literacy among boys and includes as one of its features to encourage male family members to read with boys.

To summarise, despite the important role parents could play in promoting gender equality, government projects and initiatives that aim to inform and educate them about gender equality issues are rare. Furthermore, the attempts made to involve parents more closely in promoting gender equality initiatives in schools are even more limited.

CHAPTER 5: GENDER PATTERNS IN EDUCATIONAL ATTAINMENT

Educational attainment plays a key role in determining life chances (see Chapter 1). Equal enrolment and completion rates have long been seen as important indicators of gender equality in education, which, in turn, should contribute to gender equality in society. This chapter discusses attainment in terms of participation and results obtained. Firstly, it looks at proportions of females and males graduating/completing education. The earliest differences in attainment between boys and girls are manifested in falling behind in school and grade repetition, where these phenomena exist. Both situations are more common for boys. Boys also predominate among the pupils who leave school early while, in contrast, more girls than boys receive an upper secondary school diploma.

An overview of gender patterns in attainment in terms of acquired abilities and skills was provided in Chapter 2. This chapter complements the previously discussed international survey findings with an overview of national test results. This data reveals that girls usually perform somewhat better at school-leaving examinations and obtain higher grades.

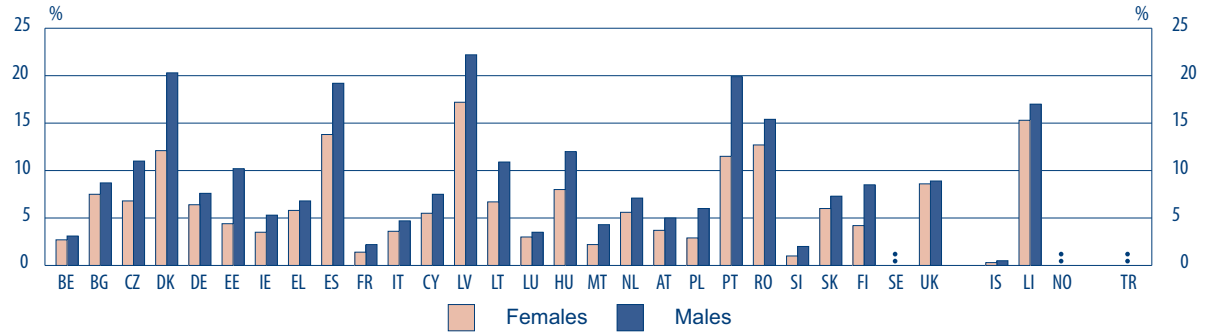
All of the data outlined below suggests that, in general, boys are underachieving compared to girls. However, special disadvantaged groups with low attainment do exist within the general population of boys and girls. In order to fully consider them, a special section presents the relevant country-specific data.

Finally, the chapter covers current policy responses to close gender gaps in attainment.

5.1. Falling behind in school

In many countries boys tend to fall behind in school compared to girls. The trend is quite pronounced when pupils progress to upper secondary school, but less visible in lower secondary. Figure 5.1 shows the percentage of males and females who are still in ISCED 1 at the age when at least 80 % of their age group is already attending ISCED 2. In more than half of European countries there is almost no difference (i.e. less than 2 %) between boys and girls that have not advanced to ISCED 2. Yet, even when the difference is small, it is always in favour of girls. The difference is pronounced (i.e. 5-8 %) in Denmark, Estonia, Spain, Latvia and Portugal.

Figure 5.1: Percentage of males and females still at ISCED 1 at the age when at least 80 % of their age group is at ISCED 2, 2007



	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU	HU
Females in ISCED 1	2.7	7.5	6.8	12.1	6.4	4.4	3.5	5.8	13.8	1.4	3.6	5.5	17.2	6.7	3.0	8.0
Males in ISCED 1	3.1	8.7	11.0	20.3	7.6	10.2	5.3	6.8	19.2	2.2	4.7	7.5	22.2	10.9	3.5	12.0
Total % in ISCED 2	95.8	91.9	91.0	83.7	92.1	92.6	95.5	93.7	83.4	97.9	95.8	93.5	80.2	91.2	95.0	90.0
Age when min. 80 % at ISCED 2	13	11	12	13	11	13	13	12	12	12	11	12	13	11	13	11

	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK (1)	UK-SCT	IS	LI	NO	TR
Females in ISCED 1	2.2	5.6	3.7	2.9	11.5	12.7	1.0	6.0	4.2	:	1.6	0.5	0.3	15.3	:	:
Males in ISCED 1	4.3	7.1	5.0	6.0	19.9	15.4	2.0	7.3	8.5	:	1.7	0.7	0.5	17.0	:	:
Total % in ISCED 2	96.8	93.6	95.6	95.2	84.3	85.9	98.5	93.3	93.6	:	97.1	0.0	99.6	82.5	:	:
Age when min. 80 % at ISCED 2	12	13	11	13	13	11	12	11	13	13	11	12	13	12	13	:

UK (1): UK-ENG/WLS/NIR

Source: Eurydice calculations based on Eurostat.

Explanatory notes

The calculations are based on Eurostat data on 'students by ISCED level, age and sex'. For each country, the age at which a minimum of 80 % of students had reached ISCED 2 was determined. For the age that was set, the % of girls that were still attending ISCED 1 was calculated from total number of girls of that age in the respective country. The same calculations were made for boys.

Additional notes

Sweden and **Norway**: Marked as missing, since age distributions provided for Eurostat are estimated by school year.
United Kingdom: Data from Department for Children, Schools and Families. Public and private schools counted together, special education excluded.
Turkey: There is no distinction between ISCED 1 and 2.

The difference in the proportions of boys and girls falling behind in some instances is due to boys starting school later than girls.

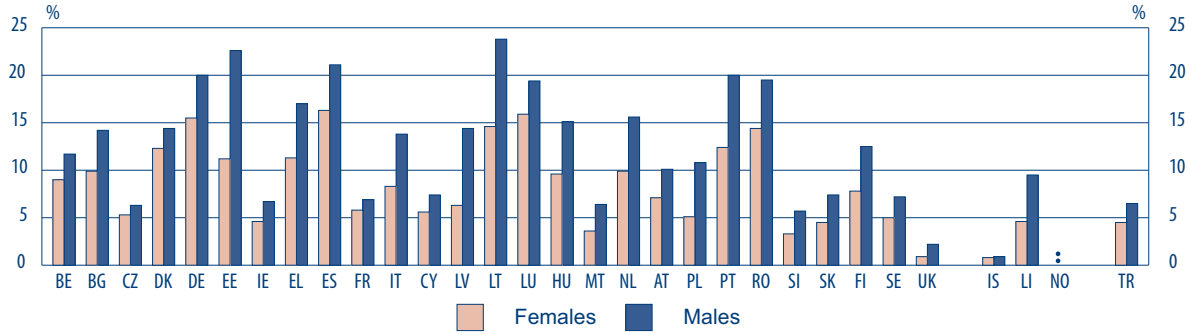
In the **Czech Republic** in 2008/09, boys constituted 64 % of pupils entering compulsory education later than the school starting age (ÚIV, 2009). The start of compulsory schooling (i.e. at six years) may be postponed by one year at the request of the legal guardian if the child is not physically or mentally ready for school attendance. This readiness for school is judged on the basis of an examination by an educational and psychological service or special educational centre.

Studies in **Germany** indicate two factors related to boys starting school later. Firstly, parents doubt their boys' ability to concentrate. Secondly, boys of school starting age show less interest in reading and have lower social competence (Haug, 2006; Wienholz, 2008).

A **Polish** study on the 'readiness for school' level of six year-olds has revealed significant differences in favour of girls. Generally, girls ranked higher than boys in reading, writing, numeracy and reasoning. In addition, girls also displayed higher levels of social and emotional maturity (Kopik, 2007).

There are greater gender differences with respect to progression to upper secondary school (Figure 5.2). The difference between males and females who are still in ISCED 2 at the age when at least 80 % of their age group is already attending ISCED 3 is less than 2 % in only five countries (Czech Republic, France, Cyprus, the United Kingdom and Iceland). In many Southern and Eastern European countries, as well as the Netherlands, there are considerably more boys than girls falling behind (i.e. more than 5 %). In the Baltic countries, the tendency is especially pronounced and the difference reaches 8 to 11 %.

Figure 5.2: Percentage of males and females still at ISCED 2 at the age when at least 80 % of their age group is at ISCED 3, 2007



	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU	HU
Females in ISCED 2	9.0	9.9	5.3	12.3	15.5	11.2	4.6	11.3	16.3	5.8	8.3	5.6	6.3	14.6	15.9	9.6
Males in ISCED 2	11.7	14.2	6.3	14.4	20.0	22.6	6.7	17.0	21.1	6.9	13.8	7.4	14.4	23.8	19.4	15.1
Total % in ISCED 3	89.6	86.8	94.2	86.6	81.1	82.7	92.4	85.6	80.8	92.8	88.8	93.2	88.7	80.4	82.3	87.4
Age when min. 80 % at ISCED 3	15	15	16	17	17	16	16	15	17	16	14	15	17	17	16	15

	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	IS	LI	NO	TR
Females in ISCED 2	3.6	9.9	7.1	5.1	12.4	14.4	3.3	4.5	7.8	5.0	0.9	0.8	4.6	:	4.5
Males in ISCED 2	6.4	15.6	10.1	10.8	20.0	19.5	5.7	7.4	12.5	7.2	2.2	0.9	9.5	:	6.5
Total % in ISCED 3	93.3	80.0	91.3	91.7	83.5	83.0	95.4	93.8	89.8	93.8	98.4	99.2	92.2	:	94.4
Age when min. 80 % at ISCED 3	17	17	15	16	17	15	15	16	16	16	14	16	17	16	15

Source: Eurydice calculations based on Eurostat.

Additional notes

Norway: Marked as missing, since age distributions provided for Eurostat are estimated by school year.
Turkey: ISCED 2 is not separated from ISCED 1.

Explanatory notes

The calculations are based on Eurostat data on 'students by ISCED level, age and sex'. For each country, the age at which a minimum of 80 % of students had reached ISCED 3 was determined. For the age that was set, the % of girls that were still attending ISCED 2 was calculated from total number of girls of that age in the respective country. The same calculations were made for boys.

5.2. Repeating a school year

The gendered patterns in falling behind might be reinforced by the fact that there are more boys than girls who are repeating a year (or more) of schooling. The repetition of a school year can be considered as a form of support for low achievers as it seeks to adapt the curriculum to pupil performance. The requirement for a particular student to repeat a year usually follows a formal assessment or informal decision by the teachers when student has poor results in crucial subjects. Although the benefits of repeating a year are debatable (OECD, 2005, 2007a), only about one third of European countries have automatic progression to the next year during primary education (see EACEA/Eurydice 2009a, p. 231-233).

Data on pupils who repeat a school year are not systematically collected at European level, thus we rely on national statistics. In those countries which do not have automatic progression, the proportions of pupils who repeat a year can vary between countries from almost none to a significant figure. For example, in the French Community of Belgium nearly one in two pupils repeats a year at secondary school. In Ireland, Lithuania and Finland, the phenomenon is marginal, only approximately 2 % or less of an age group repeats a class.

In all countries where data by gender is available, the male repetition rate is higher than the female.

In the **French Community of Belgium** in 2006/07, 20 % of boys and 16 % of girls at primary school had had to repeat at least one year; at secondary level, 51 % of boys and 43 % of girls had had to repeat at least one year (MCF/ETNIC 2008, p. 33).

In the **Flemish Community of Belgium** in 2007/08, 16 % of boys and 15 % of girls repeated (one or more) years in primary school. The figures increase to 33 % of boys and 25 % of girls in secondary schools (Vlaams Ministerie van Onderwijs en Vorming, 2009).

In **Portugal**, repetition rates are gradually increasing with each cycle of education, with approximately 6 % higher rates for 10-17 year old boys than girls. In 2006/07, the rates reached 28 % for boys and 22 % for girls at upper secondary school (GEPE-ME & INE, 2009).

In **Romania**, the repetition rates are much lower, yet the gender gap is evident: in 2007/08 in primary education, 3 % of boys and 2 % of girls repeated a year (INS, 2008a); in lower secondary school, the rates reached 5 % for boys and 3 % for girls (INS, 2008b), and in upper secondary education 4 % for boys and 2 % for girls respectively (INS, 2008c).

Some countries only have data on the proportion of boys among pupils who repeat a year which in most cases is approximately 60 %.

In the **Czech Republic** in 2008/09, boys in primary and lower secondary constituted 63 % of pupils who repeated a year (ÚIV, 2009).

In **Germany** in 2007/08, boys constituted 58 % of pupils who repeated a year (Eurydice calculations based on Statistisches Bundesamt Deutschland (2009)).

In **Estonia**, boys predominate among pupils who repeat a year in full-time studies (62 % in 2008). However, the numbers of those who repeat and the share of boys among them have been declining recently (Statistics Estonia, 2009).

In **Spain** in public schools in 2007/08, the percentage of boys among those who repeated a year varied from 53 % among 14-16 year-olds to 61 % among 12-14 year-olds (Ministerio de Educación, 2009).

In **Italy** in 2006/07, males constituted 69 % of pupils who repeated a year in lower secondary schools and 65 % in upper secondary schools (ISTAT, 2009).

In **Latvia** in 2006/07, boys constituted 67 % of those who were repeating a year due to unsatisfactory performance (IZM, 2009).

In **Lithuania** in 2007, 70 % of pupils who repeated a year were boys (ŠVIS, 2009).

In **Poland** in 2007/08, boys constituted 66 % of pupils who repeated a year in primary school, 71 % in lower secondary school and 54.7 % in general upper secondary school (Eurydice calculations based on GUS (2008)).

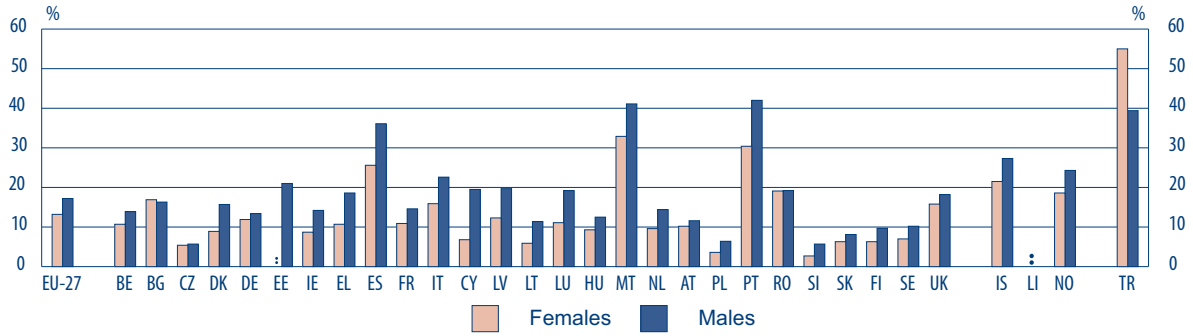
In **Slovenia** in 2008 in the 9-year basic school, 68 % of pupils who repeated a year were boys (SORS, 2009).

5.3. School drop-out and completion of upper secondary education

There are few noteworthy gender distinctions with respect to participation rates in primary and lower secondary education (ISCED 1-2). The differences emerge at the end of compulsory education ([1]): male participation rates decline faster in most countries as young women stay in education longer than young men (EACEA/Eurydice 2009a, p. 93).

Boys are more likely to drop out of school without an upper secondary education diploma than girls (see Figure 5.3). On average in the EU-27, 17 % of the male population aged 18-24 have at most lower secondary education and are not in further education or training. The corresponding figure for the female population is 13 %. There are large discrepancies between European countries, but the gender gap essentially remains very similar. Only in a few countries (Bulgaria, Romania and the Czech Republic) there are approximately the same proportions of boys and girls leaving school early (i.e. the difference is less than 1 %). Turkey stands out from the pattern as having much higher numbers of early school leavers, with girls representing the majority of these.

Figure 5.3: Early school leavers – percentage of the female/male population aged 18-24 with at most lower secondary education and not in further education or training, 2007



([1]) Compulsory education generally comes to an end either at the completion of the lower secondary level or during the upper secondary level.

	EU-27	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU
Females	13.2	10.7	16.9	5.4	8.9	11.9	:	8.7	10.7	25.6	10.9	15.9	6.8	12.3	5.9	11.1
Males	17.2	13.9	16.3	5.7	15.7	13.4	21	14.2	18.6	36.1	14.6	22.6	19.5	19.7	11.4	19.2
	HU	**MT**	**NL**	**AT**	**PL**	**PT**	**RO**	**SI**	**SK**	**FI**	**SE**	**UK**	**IS**	**LI**	**NO**	**TR**
Females	9.3	32.9	9.6	10.2	3.6	30.4	19.1	2.7	6.3	6.3	7	15.8	21.5	:	18.6	55.0
Males	12.5	41.1	14.4	11.6	6.4	42	19.2	5.7	8.1	9.7	10.2	18.2	27.3	:	24.3	39.4

Source: Eurostat (data extracted September 2009).

Additional notes

Czech Republic: Data from 2006.
France: Data do not cover the overseas departments (DOM).

Explanatory notes

Students living abroad for one year or more and conscripts on compulsory military service are not covered by the EU Labour Force Survey, which may imply higher rates than those available at national level. This is especially relevant for Cyprus.

The indicator covers non-nationals who have stayed or intend to stay in the country for one year or more.

In the rest of Europe, the gender gap remains in favour of girls. Considerably more boys than girls drop out of school in Spain, Cyprus and Portugal – the difference is more than 10 %. Yet the average gender gap in Europe is approximately 4 % and its magnitude does not seem to relate to the general level of school drop-outs in a country. Countries with high numbers of early school leavers – Spain, Malta, Portugal and Iceland – have above 25 % of male and above 20 % of female early school leavers. The countries with small numbers of drop-outs – the Czech Republic, Poland, Slovenia, Slovakia and Finland – have approximately 5 to 10 % of male early school leavers and accordingly approximately 3 to 6 % of female.

Early school leavers often face difficulties finding employment and continuing their education. Poland presented a vivid example of such gender patterns.

> **Polish** basic vocational schools (ISCED 2), which are the least favourable option in terms of employment and further education prospects, are overwhelmingly dominated by men. These schools aim to train students for specific occupations, but do not lead to the maturity exam. In 2007/08 women constituted only 28 % of all students in the basic vocational schools as women tend to choose schools which offer opportunities for further study (Eurydice calculations based on GUS (2008)).

Since more boys than girls drop out from school, evidently there are more girls than boys who complete upper secondary school. In 2007 on average in the EU-27 among 20-24 year-olds, there were 81 % of females and 75 % of males with upper secondary attainment (European Commission 2008, p. 204).

Yet the tendency that more girls than boys obtain an upper secondary school certificate seems to have emerged only recently. On examining the figures for the population aged 25 to 64, overall in the EU-27, there are slightly more males than females with upper secondary education. In 2008, on average in the EU-27, 73 % of men and 70 % of women aged 25 to 64 have completed at least upper secondary education (Eurostat, 2009).

The participation of women and men in higher education is discussed in Chapter 8.

5.4. Gender patterns in national tests and examinations

Many European countries hold numerous national tests which are taken by pupils in various school years and subjects (for more details see EACEA/Eurydice, 2009b). In most cases gender differences are taken into account in the reports, thus there is a vast amount of information available. However, the results of national tests across various countries are not comparable due to differences in methodology, target populations and years of testing. Most importantly, the relative advantages of boys or girls in national tests largely mirror international student assessment survey results (see Chapter 2). In national tests girls usually score better in reading, while there are mixed results or no differences in science and mathematics. In order not to repeat the same patterns as discussed in Chapter 2, here we will concentrate on general achievement levels and discuss the few national tests that differed from the international assessment results.

Girls usually perform better at school leaving examinations at the end of compulsory education and upper secondary school. On average, girls also achieve higher grades or passing rates. Such a tendency is evident in Cyprus, Denmark, Ireland, France, Italy, Latvia, Lithuania, Poland, Romania, Slovenia, Sweden, the United Kingdom, Iceland and Norway. Although mathematics has traditionally been a subject where boys perform slightly better than girls, this trend has now been reversed in several countries (Ireland, Latvia, the United Kingdom and Iceland). Nevertheless, the gap is much smaller than in reading.

In **Denmark**, in 2008, on average, in the upper secondary school leaving examination girls receive higher grades (6.7) than boys (6.4). In lower secondary examinations girls have higher grades in all subjects (reading, spelling, written and oral Danish, physics/chemistry and written English), except mathematics (Danish Ministry of Education, 2009).

In **Latvia**, in school leaving examinations in 2008, more boys than girls took examinations in mathematics (17 % of boys and 14 % of girls), but girls showed higher results than boys. The same tendency was observed in Biology, Latvian and the State Language (Latvian) for ethnic minorities. An exception is chemistry – more girls than boys took the examination, but boys showed better results. In physics, approximately the same percentage of boys and girls received the highest grade, but there were higher proportions of boys receiving the lowest grades (VISC, 2009).

Ireland reported similar patterns in a state examination called the Leaving Certificate Examination at age 17 or 18. In 2008, more males than females took higher-level mathematics and physics papers, but more females than males achieved higher grades. At all levels females had lower failure rates than males. Also in the Junior Certificate (JC – the State examination at age 15 approximately) girls are more likely to take the examination at higher level and are more likely to obtain an honours grade than their male counterparts (State Examinations Commission, 2009). Irish pupils' performance in the JC examinations contrasts with some PISA results. In PISA mathematics assessment boys outperformed girls, while girls achieve better results on the state JC mathematics examination. The difference in performance between males and females in Ireland on PISA science was not statistically significantly different, yet females perform better than males on both JC science, and on Leaving Certificate Biology, Chemistry and Physics. As mentioned in Chapters 1 and 2, Close and Shiel (2009) proposed some possible reasons for these discrepancies in mathematics. Stronger performance of males in PISA might be related to differences in tested content areas, and a greater proportion of higher-level competency and multiple-choice items, that favour males.

In **Sweden**, in upper secondary school, more women complete their studies and also, on average, obtain higher grades than men. The average female grade point on school leaving certificates in 2007/08 was 14.7, while the male average was 13.3. Approximately two thirds of those obtaining the maximum number of points (20.2) were women. Only in

physical education did boys have higher grades than girls (Skolverket, 2009). The same tendency is reported in **Norway.**

In the **United Kingdom** (**England**), concern about boys' achievements in education is nothing new – it was mentioned in the 1868 report of the Taunton Commission which sat from 1864 to 1868 to investigate secondary education (DCSF, 2009a). A gap in the proportions of boys and girls gaining good grades in the public examinations taken at 16-plus was identified soon after these exams were introduced in their present form in the late 1980s (DCSF, 2009b).

5.5. Disadvantaged groups amongst males and females

Most countries mention certain groups as a particular concern with respect to attainment, often emphasizing gaps between pupils with differing socio-economic status, from some ethnic minority groups or specific living areas (rural/urban). Although there are distinct gender patterns, it is not very common that specific attention is paid to girls' or boys' attainment within those groups.

Overall the educational attainment and achievement of girls from ethnic minorities is better than that of ethnic minority boys, but worse than that of girls from the majority groups. Ethnicity, however, does not have a uniform effect.

In the **Flemish Community of Belgium**, studies show that there are substantial differences between different ethnicities in girls' attainment: Turkish and North African girls are under-represented in general secondary education and overrepresented in vocational tracks compared with Southern European girls (Duquet et al., 2006).

According to tests in grade 9, in **Sweden**, students with a Swedish background perform, on average, better than students with a foreign background. On the other hand girls with a non-Swedish background perform, on average, slightly better than boys with Swedish background (SOU, 2009).

In the **United Kingdom** (**England**), Black Caribbean and other black boys are the least likely of any ethnic group to achieve good grades in the public examinations taken at 16-plus. Black Caribbean and other black girls are not disadvantaged to the same extent (DCSF, 2007).

In the **United Kingdom** (**Scotland**), the average scores of pupils at the end of ISCED 2 in national examinations varies greatly among different ethnic groups. Black Caribbean males have the lowest results, while both girls and boys among Asian-Chinese students have higher results than the white-UK or white-other boys and girls (Scottish Government, 2009).

In several countries, the education of Roma girls is of a particular concern as Roma women and girls often face multiple and intersecting forms of discrimination based on sex, ethnic or cultural background and socio-economic status.

In **Portugal**, both boys and girls of gypsy traveller origin drop out of school early, but it is even earlier among girls and starts at puberty. There are culturally-specific and lifestyle causes that have been difficult to overcome (Casa-Nova, 2002, 2004).

In **Romania**, only half of Roma children aged 7-16 are enrolled in education and Roma girls' enrolment rates are approximately 5 % lower than Roma boys' (year 1998; Zamfir et al., 2002).

In other countries Roma boys have more difficulties than girls.

A representative survey of schools in Roma neighbourhoods in the **Czech Republic** indicates that approximately one fifth of Roma girls and one quarter of Roma boys are transferred from mainstream schools to the schools for children with special educational needs, while in the general population the figure barely reaches 1-3 % (GAC, 2009).

While elsewhere the situation may vary depending on educational levels.

In **Spain**, Roma girls tend to drop out during the transition from primary education to secondary education, thus there are more Roma boys (61 %) than girls (39 %) starting secondary education. However, boys tend to drop out of lower secondary education, while girls, who have started it, tend to stay. Thus in the fourth year of lower secondary education, the percentage of Roma girls (63 %) is almost twice as much as boys' (37 %) (CIDE & Instituto de la Mujer, 2006).

In Romania the main educational gaps reflect the place of residence and reshape the common gender patterns.

In **Romania**, the drop-out rate of girls in rural areas is higher than the drop-out rate of boys in urban areas. Pupils from urban areas are also doing better in the final lower secondary education examinations. In 2006/07, girls in urban areas had the highest attainment rate (89 %), followed by urban boys (84 %) and rural girls (78 %). Boys living in rural areas had considerably lower passing rates than these three groups – below 68 % (INS, 2008b).

5.6. Policy responses to gender differences in attainment

Despite rather clear gender patterns, most countries have no specific strategies in place to address gender-related attainment problems. Attainment policies usually have a general focus on equal opportunities and equal outcomes, prioritizing the educational needs of children and young people from disadvantaged backgrounds.

If present, the policies tackling gender differences in attainment can be clustered into the following groups:

- General attempts to improve boys' achievement.
- Measures against school drop-out that are either targeted or have an indirect effect on boys.
- Initiatives for improving achievement in certain subjects, namely boys' achievement in reading and girls' motivation in mathematics and science.
- Specific programmes for certain vulnerable groups of boys or girls.

The Flemish Community of Belgium, Ireland and the United Kingdom identify the objective of reducing boys' underachievement as a policy priority. Policies usually involve the promotion of new learning and teaching styles, development of specific strategies and teaching instructions, or improvement of pupil-teacher ratios.

A recent yet modest project Venus ([2]) in the **Flemish Community of Belgium** took as its starting point the concern about boys' underachievement in secondary education and – in line with a gender mainstreaming approach – promoted more varied teaching styles. It provided various concrete suggestions and practices that are more effective, more motivating and challenging for both boys *and* girls, whatever their learning styles.

([2]) See: http://www.ohmygods.be/

Within the framework of support for persons with special education needs, schools in **Ireland** are asked to give priority to pupils who are performing at or below the 10th percentile in English reading and/or mathematics. As more boys than girls are in that group, differing pupil-teacher ratios apply to boys', co-educational and girls' schools in favour of boys' and co-educational schools.

In the **United Kingdom** (**England**), the Gender Agenda ([3]), which ran from 2008 to 2009, aimed to improve gender-related performance of certain groups of under-performing girls and boys. The outcomes of the programme included: a guidance document on what works; a publication which seeks to dispel myths about gender and education; and a paper which summarises research carried out into schools that had consistently closed or narrowed the attainment gap between boys and girls in English. The Gender Agenda followed the Raising Boys' Achievements project ([4]), which ran from 2000 to 2004, looking at ways of raising achievement across primary, secondary and special schools. The research team worked with over 60 schools to identify and evaluate strategies which are particularly helpful in motivating boys.

In the **United Kingdom** (**Scotland**), a *Curriculum for Excellence* proposes new ways in which education should be delivered. It is hoped that such changes, although generic, should impact positively in the long term on boys' overall achievement. Particularly, there are new emphases in learning which may enable adolescent males to be more actively involved in and responsible for their learning. They include an emphasis on using technology for learning; learning as part of a group; taking a lead role; developing communication skills; and solving problems as a part of learning.

Very few countries have specific initiatives for tackling high male drop-out rates.

In **Portugal**, a recently introduced opportunity to take courses leading to a dual certificate provides an alternative to regular education which has led to an increase in compulsory school completion rates, especially for boys.

The **Swedish** National Agency for Education distributes grants for gender equality projects, including projects aiming at reducing drop-out rates among boys in upper secondary school.

In the **United Kingdom** (**Scotland**), in recent years, there has been a re-balancing of the curriculum to value achievement in the more practical/vocational courses. In many cases, curriculum flexibility has helped to prevent pupils, in particular boys, becoming disengaged and disaffected, while still challenging them educationally.

Austria and the United Kingdom (England) have some gender-specific initiatives to improve reading literacy.

After the 'PISA shock' in 2000 **Austria** has been implementing many initiatives that promote reading. Among them, a scientific study which was launched in order to analyse reasons for gender gaps in reading competences. On that basis gender-specific concepts for promotion of reading were developed (BMUKK, 2007). The report includes practical suggestions for lessons.

The **United Kingdom** (**England**) 'Reading Champions' ([5]) initiative aims to find and celebrate positive male role models for reading. Schools invite boys and men who are influential with pupils to become Reading Champions. These Champions encourage other boys to get into reading by running their own positive reading activities and promotions. Boys can be nominated for awards, which provides recognition for their achievements and helps keep them motivated.

([3]) See: http://www.teachernet.gov.uk/wholeschool/equality/genderequalityduty/thegenderagenda/
([4]) See: http://www-rba.educ.cam.ac.uk/index.html
([5]) See: http://www.literacytrust.org.uk/Campaign/Champions/index.html

The **United Kingdom** (**Wales**) recently launched the campaign *Read A Million Words Together* to help improve literacy in boys aged 9 to 14 by encouraging them to read more both at home and in school. The campaign provides a wider range of curriculum reading materials which appeal to boys' tastes and encourages male family members to read with boys. A copy of a book outlining teaching methods proven to develop boys' literacy skills has also been sent to every school in Wales.

Quite similarly, although to a smaller scale, in the **United Kingdom** (**Scotland**), in the early primary years, a number of schools use strategies such as 'story sacks' or 'bags of books' and/or involve fathers in activities designed to tackle stereotyping, raising of literacy levels, improving relationships, social skills and enhancing motivation to learn. Such approaches to raising boys' attainment are, however, not consistently followed through into secondary education (SEED 2006, p. 2).

Only Austria reported a specific gender initiative for improving mathematics and science teaching:

As a response to unsatisfactory results in TIMSS, in 1998 **Austria** launched a project 'Innovations in Mathematics, Science and Technology Teaching' (IMST) ([6]), which is now in the third project stage. Within IMST a Gender-Network was established for improving teaching in mathematics and the natural sciences, for expanding learning perspectives and action ranges for girls and boys, as well as for narrowing the gender gap. It offers counselling and information on new developments, as well as initial and further training, in gender issues.

Several countries have specific measures or programmes developed for boys or girls from certain vulnerable groups. A special concern regarding the overall achievement of boys from some ethnic minority groups is reported in Denmark, the Netherlands, Sweden and the United Kingdom.

As a part of the 2009 Perspective and Action plan on the area of equality, the **Danish** Ministry of Education launched a research project on why ethnic minority boys perform worse in primary school than ethnic girls and ethnic Danish boys and girls.

Portugal and Romania have special programmes for Roma girls, while Spain supports girls and women in vulnerable situations, which also includes Roma.

In **Portugal**, the first effective measure against Roma girls' drop-out is the provision of gypsy traveller ethnicity mediators who work in schools and establish interfaces between the community and the school. Also, a 'mobile school' project ([7]) is currently being developed. This creates a link between students in the 'mother school' with all students' learning materials and when students move away or get married or become pregnant, it gives them daily contact via the Internet with specialist teachers. The specialised methodology is applied to all children of itinerant communities (travelling fairs, circuses) which have high and early drop-out rates.

In **Romania**, some specific educational programmes have been developed for Roma children, including efforts to encourage the participation in education of Roma girls.

Spain pays special attention to certain female groups, i.e. immigrant women, Roma women or women in a disadvantaged socio-economic situation. Social and labour guidance courses, training activities, social abilities and self-esteem workshops, specific information and advertising campaigns are directed to those women groups, their families and schools in order to facilitate their continuation in the education system.

([6]) See: http://imst.uni-klu.ac.at/english.php

([7]) See: http://area.dgidc.min-edu.pt/escola_movel/escola.html

The **United Kingdom** (**England**) Department for Children, Schools and Families' (DCSF) National Strategies ([8]) provides a range of advice and guidance to support the learning of groups of pupils vulnerable to underachieving, for example Black Caribbean boys, white working class boys, etc.

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Gender gaps in attainment increase with educational levels. Although similar proportions of boys and girls attend and complete compulsory education, girls' relative advantages in attainment are emerging with boys falling behind and repeating school years more often than girls in lower secondary school. These differences have already become pronounced in lower secondary education in many European countries. Boys often constitute approximately 60 % of pupils who repeat years and the male repetition rate is always higher than the female. Girls' achievement lead becomes established in upper secondary attainment: more boys leave school without any qualification, while more girls acquire an upper secondary school certificate that allows continuation of education at tertiary level. Moreover, girls usually obtain higher grades and higher pass rates in school leaving examinations, which in turn helps them to enter desired university programmes (see Chapter 8). Nevertheless, it is important to note that the average patterns of girls' lead over boys conceal important differences among certain groups of boys and girls.

Despite these rather distinct gender patterns in attainment, only a few countries have specific gender policies. Most attention and many policy efforts are directed generally towards children from disadvantaged groups. The most common policies tackling gender gaps in attainment concern boys' underachievement. In some countries, special programmes have been developed for improving boys' reading skills and girls' achievement in mathematics and science. There are also some specific initiatives for certain vulnerable groups of boys or girls, for example Roma girls.

([8]) See: http://nationalstrategies.standards.dcsf.gov.uk/inclusion/ethnicitysocialclassandgenderachievement

CHAPTER 6: CO-EDUCATION AND SINGLE-SEX SETTINGS

Long a domain of private and denominational schools, the concept of single-sex education has been receiving quite a lot of interest in recent years and has been discussed in the media, at least to some extent, in many European countries. As mentioned in Chapter 1, the 'new' interpretation of this concept is that it allows girls and boys greater freedom to choose subjects not associated with their gender, it provides space for girls and helps to improve their self-confidence, and it encourages boys to work harder without worrying about their image as a learner. However, research results on the effectiveness of single-sex settings for improving pupil achievement are inconclusive.

The initial idea of co-education, however, was to give equal access to education to both sexes and also to foster gender equality. The current extent of this type of provision is not a long-established tradition in European countries. With the exception of the Scandinavian countries, it was introduced in the majority of European countries largely after World War II but, in others (e.g. Greece, Spain, Austria and Portugal), only in the 1970s. Although regarded nowadays as a principle of education in most European countries, co-education is, in fact, a tradition dating back only 35 to 60 years depending on the country (Encyclopædia Britannica Online, 2009).

This chapter shows where public single-sex settings (whole school or classes) exist and discusses whether these are supported by any official policies.

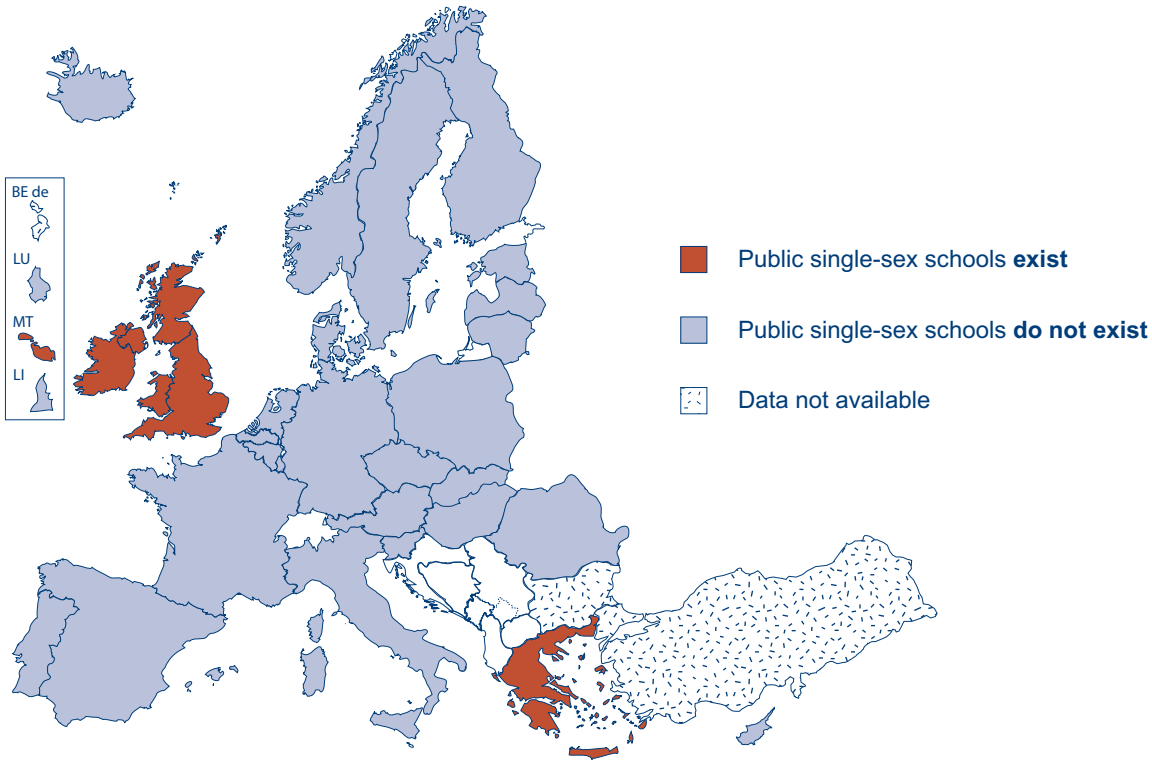
6.1. Single-sex schools

As shown by Figure 6.1, public single-sex schools exist in only seven European countries and regions. The majority of public schools at all levels and in all European countries are co-educational. Where public single-sex schools exist, their number varies largely from one country to the next. While there is only one in Scotland, 7 in Wales and 25 in Malta, there are 77 in Northern Ireland, 120 in Ireland ([1]) and over 400 in England. In Greece, there are 27 public ecclesiastical single-sex secondary schools which are reserved for boys.

Co-education is considered an educational principle in the vast majority of countries. It is therefore obligatory in most countries to provide public education in mixed institutions. In Ireland and the United Kingdom, however, parental demand has to be taken into consideration when decisions are made about changes to provision in a local area. Interestingly, in Ireland and the United Kingdom there has been a certain tradition of considering single-sex schools as 'better' schools. In England, in particular, there is a significant overlap between academically selective and single-sex schools.

([1]) Information not verified at national level.

Figure 6.1: Existence of public single-sex schools in Europe, ISCED 1, 2 and 3, 2008/09



Source: Eurydice.

Additional note

Ireland: Information not verified at national level.

Ireland reports on a recent decrease in the number of such schools.

In **Ireland**, there has been a steady decrease in the number of primary school children who are educated in single-sex schools. In 1975, over 60 % of children were in single-sex primary schools, this decreased to 20 % in 2005.

A similar pattern has occurred in secondary education. However, a larger proportion of girls than boys attend single-sex secondary schools. In 1980, over 50 % of boys and 60 % of girls attended single-sex schools. In 2005, 30 % of boys and 42 % of girls attended single-sex schools.

The explicit policy of Irish education authorities is nowadays to promote co-education. This is also mentioned as a concern for Belgium (Flemish Community) and Spain.

In **Spain**, a website ([2]) includes and disseminates legislation, programmes and materials on co-education. One of its sections, called 'Co-education around the world' refers specifically to policies and strategies undertaken internationally.

([2]) See: http://www.educación.es/intercambia

In Poland, in 2006, the Ministry showed interest in establishing single-sex schools within the public school system, intended to encourage academic institutions to provide teacher training programmes and undertake research on the effectiveness of single-sex education.

> The idea of establishing single-sex schools came up in 2006 as one possible measure to provide better conditions for education in lower secondary schools. The Minister of National Education did not conceal that the establishment of single-sex schools was one of the options considered to combat violence among pupils in school. However, experts' opinions on single-sex education were divided. The Ministry sought to convince the general public of the supremacy of single-sex education over co-education, which provoked numerous discussions and caused concern in many communities, including parents and teachers. The academic community warned that, while girls-only and boys-only schools should exist, this could by no means be a general rule applicable throughout the country. The assumption that single-sex lower secondary schools would eliminate violence in pupil-pupil and teacher-pupil interactions met with widespread criticism.
>
> For some time, the Ministry's website included a page devoted to 'Single-Sex Education' which presented its advantages. It contained information about research findings in this area, seminars, publications, etc. Since the change of government, the page is no longer available and there is currently no public debate on single-sex education.

Similar, but smaller-scale interest from education authorities has also been reported for Estonia.

However, most countries report that discussions over the potential benefits of single-sex schools have not led to an increase in such settings.

In some countries, there are schools which are in fact single-sex without the explicit intention of providing this form of education. The fact is related in particular to upper secondary technical or vocational education, which traditionally attracts one sex rather than the other. This phenomenon is therefore clearly linked to gender-stereotyped career choice.

While public single-sex schools are not very common in most countries, such schools can be found in the private sector in almost all countries. They may be funded to a large extent by public subsidies or, on the contrary, be completely independent financially. In most cases they are faith schools (catholic, protestant and muslim). Only a few countries report that specific pedagogic aims are the main reason for the foundation of such schools. However, in most countries this sector is not well-developed.

6.2. Single-sex classes

Even though public single-sex schools are rare, single-sex classes within otherwise co-educational schools exist in virtually all European countries. Decisions to set up single-sex classes are generally taken at school level. The most common subjects, for which single-sex classes have been traditionally provided, are physical education and crafts. However, such choices are clearly linked to traditions, rather than considerations of challenging traditional gender patterns.

Single-sex classes for sex or health education are organised at the discretion of the school or local education authority in France, Liechtenstein and Sweden.

Only Denmark and the United Kingdom (Scotland) report that the organisation of single-sex settings is linked to reflections on how to counteract underachievement and behavioural problems. In Denmark,

however, this is not such a new initiative, although the motivation for putting in place such provision seems to have changed.

> Some primary schools experiment with dividing classes into boys and girls for shorter periods of a day, without organising fixed single-sex classes. The idea is to give more room to both boys and girls. The fact that single-sex education is used in basic school is not a new phenomenon. However, the pedagogical reasons associated with gender segregation in use today do differ from earlier times and have turned the ideas about gender, school and pedagogic learning upside-down. In the 1970's and 1980's, views about social gender roles dominated the debate, but today biological considerations are put forward as for the reason why boys and girls perform differently in school.

However, as the United Kingdom (Scotland) points out, views on the ultimate success of single-sex classes do vary.

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The introduction of co-education in the public school system has been considered in many countries as a step towards equality achieved less than fifty years ago. The reintroduction of single-sex settings does not therefore seem to be a very attractive option in European countries. This is certainly also coupled with the fact that research results on the positive effects of the separation of the sexes are inconclusive (Smithers & Robinson, 2006).

Finally, the cost-effectiveness of educational provision may also play a part in the reluctance of countries to revert to single-sex education: providing separate schools cannot be considered as an economically-viable option.

CHAPTER 7: TEACHERS, SCHOOL HEADS AND GENDER ISSUES

Teachers play a crucial role in developing young people's understanding of gender roles. During the course of their work, teachers have the opportunity to encourage both critical thinking and a questioning of gender stereotypes. It is therefore important to ensure that future and serving teachers receive training on these issues and have access to ample information on gender topics. The understanding of their own gender role is also highly influential and can contribute either to maintaining or breaking gender stereotypes within schools.

The aim of this chapter is to present four critical issues with respect to education staff. Firstly, it looks at statistical data showing the predominance of women in classroom teaching. This contrasts sharply with the relative absence of women in management positions in schools. It then discusses campaigns and initiatives at national level aiming at attracting more men into the teaching profession. Finally, it examines how far gender is included as a topic in initial teacher education and continuing professional development for staff in education.

7.1. The feminisation of the teaching profession

Women account for the large majority of teachers in primary and lower secondary education. However, the proportion varies according to the level of education: the younger the children, the higher the number of women teachers. In all European countries, except Turkey, women are the majority among primary teachers (ISCED 1) with proportions varying between 65 % in Greece and 98 % in Slovenia. In the Czech Republic, Italy, Hungary, Latvia, Lithuania and Slovenia, there are very few men teaching at this level: male teachers comprise approximately 5 % or less.

Teaching at ISCED level 2 is statistically still a woman's job, yet there are slightly more male teachers than at primary level. At this educational level, the proportion of women teachers varies between 52 % in Liechtenstein and 86 % in Latvia.

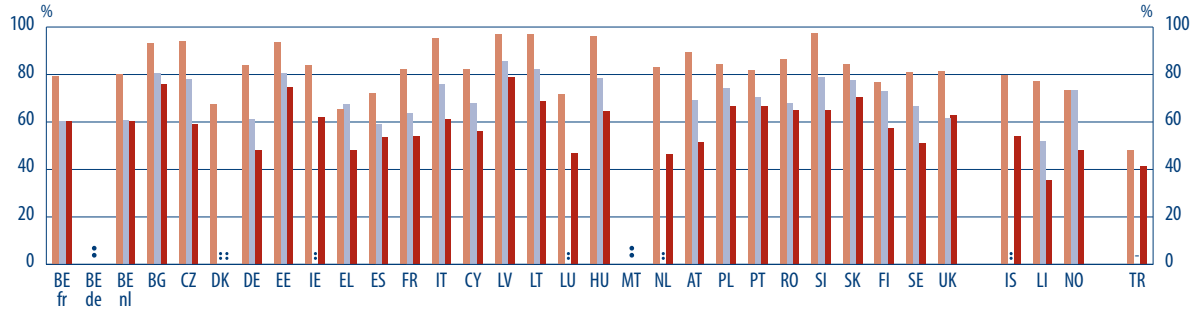
However, female representation decreases markedly the higher the level of education in all countries for which data is available.

This is the case in particular in upper secondary education (ISCED 3) in the Czech Republic, Germany, Greece, Lithuania, Austria, Finland, Sweden, Liechtenstein and Norway. Here, female representation decreases strongly between ISCED levels 2 and 3. Overall, teaching at ISCED level 3 is relatively more balanced between women and men. In 11 countries ([1]) (of the total sample of 31) the proportion of women teachers varies between 45 and 56 %.

This contrasts sharply with the representation of women at higher education levels (ISCED 5 and 6 – see Chapter 8). In half of all countries considered, women teachers represent less than 40 % of the total at these levels.

([1]) Germany, Greece, Spain, France, Cyprus, Luxembourg, the Netherlands, Austria, Sweden, Iceland and Norway.

Figure 7.1: Percentage of female teachers in primary and secondary education (ISCED 1, 2 and 3), public and private sectors combined, 2007



	BE fr	BE de	BE nl	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU
ISCED 1	79.4	:	80.0	93.3	94.2	67.6	84.0	93.6	84.0	65.3	72.0	82.1	95.3	82.1	97.2	97.2	71.9
ISCED 2	60.4	:	60.8	80.4	78.1	:	61.2	80.4	:	67.4	59.0	63.8	75.8	68.0	85.5	82.1	:
ISCED 3	60.3	:	60.4	75.9	59.0	:	48.2	74.7	62.2	48.2	53.7	53.9	61.2	56.3	79.1	68.9	47.1

	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK		IS	LI	NO	TR
ISCED 1	96.0	:	83.1	89.3	84.3	81.8	86.7	97.6	84.6	77.0	81.2	81.3		79.9	77.1	73.3	48.0
ISCED 2	78.3	:	:	69.1	74.1	70.4	68.1	78.8	77.6	72.9	66.6	61.6		:	51.9	73.3	-
ISCED 3	64.5	:	46.4	51.6	66.5	66.6	65.2	65.2	70.3	57.5	51.1	62.8		54.0	35.6	48.3	41.3

Source: Eurostat, UOE (data extracted September 2009).

Additional notes

Belgium: Teachers in the German-speaking Community and those working in independent private institutions are not included. ISCED 3 includes ISCED 4.
Ireland, Finland and **United Kingdom**: ISCED 3 includes ISCED 4.
Luxembourg: The Figure relates solely to the public sector.
Netherlands: ISCED 1 includes ISCED 0.
Iceland: ISCED 3 partially includes ISCED 4.

Explanatory note

Only teachers involved in providing direct instruction are taken into account. Data include teachers in special education and all others who work with pupils as a whole class in a classroom, with small groups in a resource room or on a one-to-one basis inside or outside a regular classroom. Both full-time and part-time working teachers in the public and private sectors are included. Trainee or teacher's aides are not included.

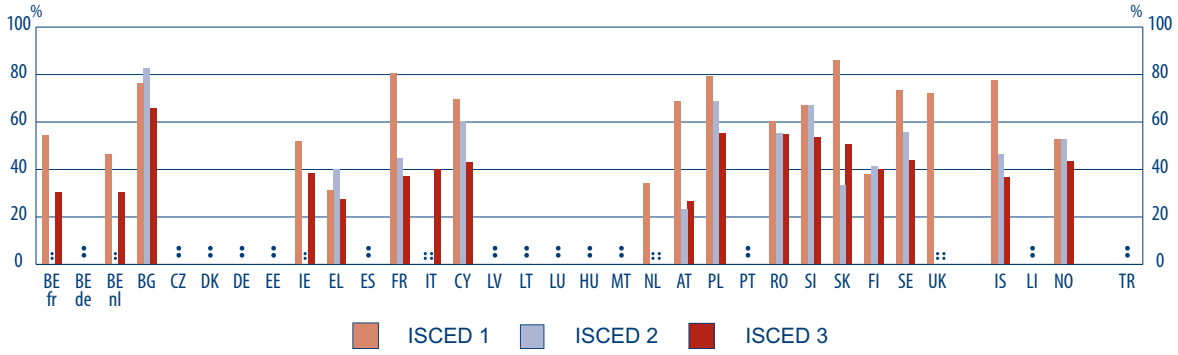
Regarding female participation in school management positions, the situation is also relative to the level of education. Based on the available data, women are often over-represented as heads of primary schools. In fact, in Bulgaria, France, Poland, Slovakia, Sweden, the United Kingdom and Iceland, over 70 % of primary school heads are women.

This percentage, however, declines rapidly at secondary education level with particularly marked differences between levels in France, Austria, Slovakia, Sweden and Iceland. In Austria, for example, less than 30 % of all (lower and upper) secondary school heads are women, in the other countries for which data is available, this percentage is also below 55 for upper secondary schools. This is also the case in France and Finland for lower secondary schools.

The recent OECD's TALIS survey reports that, on average, across participant countries, only 45 % of school heads at ISCED level 2 were female. They concluded that a 'glass ceiling' may exist in a large majority of surveyed countries (OECD 2009b, p. 28). Among these OECD-surveyed countries also

covered in this report, this low percentage of female school heads is evident in Belgium (Flemish Community), Ireland, Italy, Lithuania, Austria and Portugal. Here, the percentage of female school heads is more than 30 percentage-points below the percentage of female classroom teachers.

Figure 7.2: Percentage of female school heads in primary and secondary education (ISCED 1, 2 and 3), public and private sectors combined, 2007



	BE fr	BE de	BE nl	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU
ISCED 1	54.7	:	46.4	76.3	:	:	:	:	52.0	31.3	:	80.7	:	69.8	:	:	:
ISCED 2	:	:	:	82.8	:	:	:	:	:	40.2	:	45.0	:	60.5	:	:	:
ISCED 3	30.7	:	30.5	66.0	:	:	:	:	38.7	27.7	:	37.2	40.4	43.3	:	:	:

	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK		IS	LI	NO	TR
ISCED 1	:	:	34.4	68.9	79.3	:	60.6	67.1	86.1	37.9	73.3	72.2		77.5	:	52.7	:
ISCED 2	:	:	:	23.3	68.9	:	55.4	67.0	33.3	41.6	55.6	42.8		46.7	:	52.7	:
ISCED 3	:	:	:	26.9	55.3	:	55.1	53.7	50.7	40.1	43.9			37.0	:	43.4	:

Source: Eurostat, UOE (data extracted September 2009).

Additional note

Belgium: For secondary education, data does not include education for 'social advancement'.

7.2. Strategies for improving the gender balance among teachers and schools heads

7.2.1. Initiatives to attract more men into the teaching profession

While the majority of countries report a feminisation of the teaching profession in particular at pre-primary and primary education levels, only a few countries specifically report that this is regarded as an issue of concern at political level (Belgium (French Community), Germany, Denmark, Lithuania, Finland and the United Kingdom (Scotland)). Concerns are raised with respect to a lack of male role models for children as well as a potential risk of teacher shortages. However, only a few countries have developed concrete initiatives aimed at attracting more men into the profession. Ireland and the Netherlands have launched specific campaigns to attract men into teaching at primary level and to prevent male drop-out from teacher education.

In **Ireland**, since the 1970s, there has been a significant and continuous decline in the number of males entering the teaching profession, particularly at primary level. A Primary Education Committee was established to make recommendations on strategies and initiatives to increase the number of males entering primary teaching. The final

report of the Committee recommended a coordinated promotion campaign, encouraging boys to enter primary teaching. The MATE campaign (Men as Teachers and Educators) commenced in January 2006. It aims to highlight the wide variety of skills that a primary teacher uses. In addition, it promotes the rewards of being a teacher: the value to society, work/life balance, career satisfaction, diversity of skills, professional development, conditions of employment and job security. To date, a number of strands have been put in place: placement of ads in national newspapers, radio and on the internet, production and distribution of posters to all secondary schools. The section of the eQuality Measures DVD, aimed at guidance counsellors and students, includes interviews with males working in the caring professions.

In the **Netherlands**, several initiatives were taken in recent years to stimulate men to start the 'pabo' (*pedagogische academie basisonderwijs* – teacher education colleges for primary level). Both government and organisations within the educational field are involved in these initiatives. A survey was carried out on intake and drop out of male students in the pabo ('Paboys wanted' – a wordplay on the words 'pabo' and 'boys'). It appears that many male students prematurely end their study at the pabo. For example in 2005, 44.6 % stopped after the first year, compared to 28.2 % of female students. Once they start as a teacher, a relatively large group of new male teachers give up the profession within a period of 5 years. Following these results, the *sectorbestuur Onderwijsarbeidsmarkt* (Centre of expertise concerning educational staff, set up by employers and employees) supported pilots in these colleges, focussing on the prevention of drop out both during and past-training ([2]). These pilots concentrate on developing activities aimed at a culture change in training. These include: creating a welcoming environment for both men and women; developing counselling for male (starting) students with increased contacts between men in the 'pabo's' and male teachers; coaching for male students, and training practices which fit in a better way with the wishes and needs of boys.

Apart from these two countries with their specific campaigns, several other countries started diverse initiatives for attracting men into teaching.

The **Czech** 'League of Open Men' *(Liga otevřených mužů)* initiated the programme 'Men into Schools' *(Muži do škol)* in 2008. The aim of this programme is to draw attention to the absence of men in education as teachers and other educational staff. In 2009, a conference was held under the auspices of the Minister of Education, Youth and Sport where experiences which support men in schools abroad were presented. On the basis of this conference, a strategy is being developed.

Among other measures, the Action Plan for Implementing **Lithuanian** Women's Progress Programme 1998-2000, provides, in the sphere of education, positive male discrimination as a temporary stopgap measure in admissions to pedagogical higher education institutions.

In the **United Kingdom** (**England**), the Training and Development Agency for Schools (TDA) funds taster courses to encourage men to become primary school teachers. The taster courses last for three days and include a one-day school placement.

The **Swedish** National Agency for Higher Education has been assigned the task of analysing the gender differences in study choices regarding the various specialisations in teacher education, and seek reasons for the following issues: why more men than women drop out of teacher education, which higher education institutions have implemented strategies to increase the proportion of men in teacher education programmes and which of these strategies have been successful, what proportion of men work as teachers after finishing their teacher education and factors affecting the decisions of women and men to become teachers. The Agency presented its final report to the government in March 2009. The report identifies three main causes of male drop out from teacher education. Firstly, men who come into training may be less confident about their educational choices since they have gone beyond people's expectation of

([2]) See: http://www.onderwijsarbeidsmarkt.nl/projecten/2007/paboys-meer-mannen-in-het-onderwijs/

what constitutes a male occupation. Their choice may therefore be challenged and perhaps questionable from the outset. Secondly, men in education are faced with a traditionally female culture which they must either adapt to or rebel against, either of which may present difficulties. Thirdly, men in education often lack male role models.

Actions taken in teacher education programmes to support male students include mentoring projects, networking and male counsellors for male students during teaching practice.

With respect to measures taken within universities and university colleges to attract more men into teacher education, the report finds that initiatives have focused on the recruitment of men while others focus on the retention of male trainees on teaching programmes. Some activities take the form of cooperation programmes with schools.

Improving the gender-balance among personnel in early childhood, primary and secondary education is one of the main aims of the **Norwegian** action plan for Gender Equality. One of the initiatives taken in this area is to establish teams at county level to recruit more men into early childhood education. Pilot day care centres focussing on men as employees are also put in place. The main target groups for the action plan are day-care owners, managers and employees in day care centres, in-service training institutions and students in teacher education programmes.

Many countries raise the problem of low wages and a lack of career development as a likely disincentive for men to take up teaching. Some countries try to tackle this problem at a general level.

The **Dutch** government for example is trying to increase the attractiveness of the profession in (primary) education: enhancing the quality of education and profession, providing better remuneration and better career possibilities. A plan for teacher education has been issued which should result in a higher qualifications level, a better structure and specialisation and more diversity in training courses.

However, in countries where the teaching profession enjoys reportedly high prestige (e.g. in Finland) and/or is reasonably well paid (e.g. Luxembourg), teachers at compulsory school level are, as statistics show, still predominately female. This suggests that teaching is very much associated with the notion of 'care', especially at lower levels of education which relates traditionally more to women than to men (see Chapter 1).

7.2.2. Initiatives to attract more women into school management

Boosting female participation in school management positions might be an area of concern alongside that of attracting more men into teaching. However, it seems that only a few countries provide specific initiatives to remedy this situation.

In the **Netherlands**, the aim of the programme 'more women in management' *(Meer vrouwen in het management)* is to get more women into management positions in the education sector. This has been part of an agreement reached in 2006 between the government and trade unions as well as employer organisations focusing on nine targets for staff in educational institutions.

In **Ireland**, a special initiative is geared towards women intending to join management staff. The Department of Education and Science funded an in-service course for women who were interested in progressing to management positions in education – Women into Educational Management. The course was introduced following a recommendation from a study on women in educational management which was commissioned by the Department in 1999. There is an ongoing demand for the course which is now organised by one of the national education centres. This course was included in an international programme for women in educational management (IPWEM) which was co-funded by the European Commission (COMENIUS Action 3.1).

A sub-regional project with the participation of **Liechtenstein** and regions around aims to increase the proportion of women holding leading positions in the public sector in general.

The goal of enhancing the representation of women in decision-making bodies or of obtaining a gender balance in education management is part of national strategies in **Cyprus** and **Romania**, which have yet to be implemented.

7.3. Gender as a topic in teacher education

7.3.1. Initial teacher education

In many countries, teacher education institutions enjoy full autonomy regarding the content of the programmes they provide. This means that the organisation of specific courses on gender topics is left to the discretion of the training institution. Education authorities in many countries therefore only know that gender might be included as an optional topic in initial teacher education and report on the existence of one or two courses in individual universities or teacher education institutions.

Some countries include the topic of gender among general issues of equality which form an integral part of initial teacher education. This is the case in Belgium (Flemish Community), Sweden and the United Kingdom (England, Wales and Northern Ireland). In Belgium (French Community), Denmark, France, Austria and the Netherlands, the gender dimension as such has to be taken into account in teacher education. This is included in the gender mainstreaming policy (Austria), in competence requirements of teachers (the Netherlands), in the decree on initial teacher education (Belgium - French Community), in the bachelor programme for *Folkeskole*-teachers (Denmark) or in gender-equality missions of teacher education institutions (France).

In Spain, Luxembourg and Portugal, the various action plans on gender equality currently in place provide for the inclusion of the gender dimension in initial teacher education.

In **Spain**, the 2008-2011 Strategic Plan for Equal Opportunities includes, as its first objective, the promotion of the appropriate initial training for teachers and other educational staff in co-education, prevention of gender-based violence and harassment and equal opportunities. To achieve these objectives, a series of guidelines are proposed, for instance: encouraging the creation of departments of gender studies aimed at the specific training, research and elaboration of didactic material in the faculties of education, teacher training colleges and in-service training centres; promoting the creation of postgraduate courses with a specialization in equal opportunities for women and men in education, co-education, non-sexist education and prevention of violence against women; and incorporating gender-equality-related themes in recruitment processes.

In **Portugal**, the National Action Plan for Gender Equality (2007-2010) envisages, as a strategic area of intervention, the promotion of the integration of a gender dimension not only in the specifications of competence profiles but equally in the training profiles of educational professionals, namely teachers, teacher assistants and those responsible for educational and professional guidelines.

In **Finland**, a research project was started in 2008 focussing on the 'Equality and Gender-Sensitivity in Teacher Education' (TASUKO) ([3]) which aims at providing future teachers with more theoretical and practical information on how they can promote gender equality and how they can act in a more gender-sensitive way in their work. Within the project, curricula and methodologies will be developed as well as a research programme and research results will be incorporated into teacher education.

Gender does not seem to have a prominent place within initial teacher education programmes. Its inclusion depends on individual institutions as well as individual student motivation to attend courses covering this topic. Some countries have, however, plans to give the gender dimension more room within teacher education.

7.3.2. Continuing professional development (CPD)

The situation is similar for CPD activities for educational staff. In many countries, CPD provision is highly decentralized and a large variety of public and private providers exist. It is therefore very difficult to know what types of courses are available. Gender as a topic of in-service training courses or seminars provided by public institutions seems to be rather sporadic. Only Malta reports on compulsory CPD activities for teachers which cover gender aspects.

Gender is often included in activities linked to general equality topics. The contribution of NGOs is here again particularly important in Central Eastern European countries.

As with initial teacher education, CPD activities for teachers are also linked to specific action plans in some countries. In Austria for example, gender mainstreaming is also applied to in-service teacher training centres. In Spain and Portugal, gender equality plans also envisage the inclusion of the gender dimension in CPD for educational staff.

Interesting initiatives in the field of educational staff development linked to issues such as career choices, attainment and drop-out among boys are reported by several countries.

In **France**, a national seminar on equality between girls and boys in the educational system was held in 2008 at the *École supérieure de l'Éducation nationale* (ESEN) with the aim of providing food for thought for national education managers on the diversification of girls' and boys' careers and the impact of mixed schooling on pupil behaviour.

In **Austria**, a consequence of the altogether unsatisfactory results in TIMSS was the project IMST (Innovations in Mathematics, Science and Technology Teaching), which was started in 1998. IMST aims at improving teaching in these subjects. Within IMST, a Gender-Network was established for improving teaching in mathematics and the natural sciences, for expanding learning perspectives and action ranges for girls and boys, as well as for narrowing the gender gap. It offers counselling and information on new developments, as well as training in gender issues.

During 2008-2010, the **Swedish** National Agency for Education has the task of providing in-house training with the general aim of promoting equality and combating the number of male drop-outs from upper secondary school programmes. The training is aimed at teachers and school counsellors in pre-school, compulsory school and upper secondary schools, adult education and higher education. The Agency must also spread information about this training to municipalities and schools and support them in their work to challenge traditional subject and career choices and to promote equality.

([3]) See: http://wiki.helsinki.fi/display/TASUKO/Artikkeleita

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Overall, teaching in European countries is a very female profession particularly at the lower levels of education. Although this is considered a concern in many countries, strategies to attract more men into teaching at compulsory school level are sporadic. Education management, however, is left to a large extent to men, and there seems to be a clear lack of national initiatives to address the imbalance. Policies on teacher education do not particularly take into account the gender perspective either with respect to initial training or continuing professional development activities for teachers or school heads. Training in gender issues appears to depend largely on the initiative of individual providers of teacher education.

CHAPTER 8: GENDER EQUALITY POLICIES IN HIGHER EDUCATION

This chapter discusses gender equality concerns within higher education and examines the gender-related policies introduced in European countries. Gender differences emerge in primary and secondary education partly because traditional gender roles and stereotypes tend to be reproduced in schools. These differences are then reflected in and further strengthened by the choices made and opportunities open to women and men at the higher levels of education and vocational training. Therefore, it is important to examine whether and how European countries attempt to combat these inequalities.

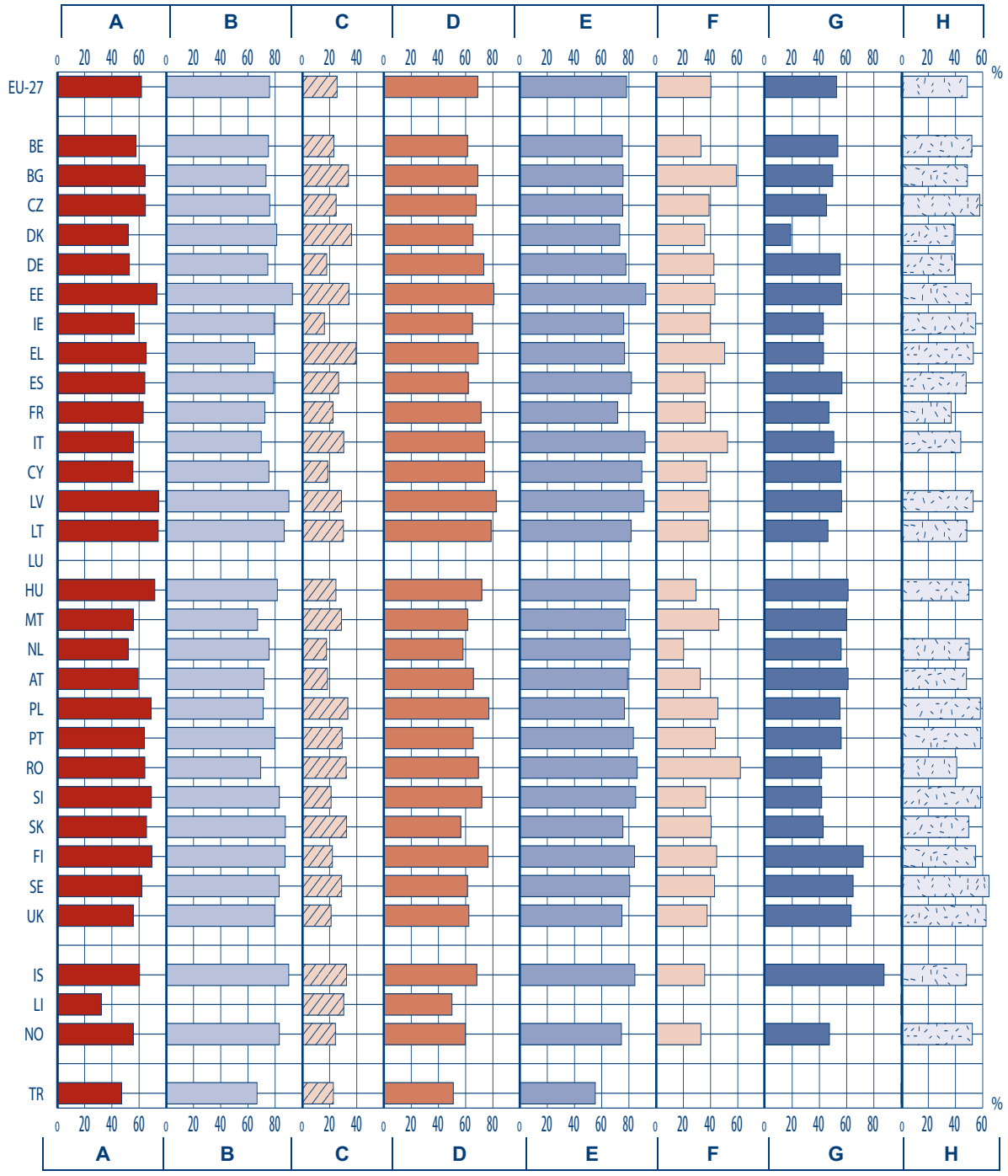
A majority of European countries have designed policies or have supported projects targeting gender inequalities in higher education. Several countries incorporate specific gender equality provisions in legislation or in governmental strategies and some make it compulsory for higher education institutions to create their own gender equality policies (see Chapter 3). As mentioned in Chapter 3, there are two main concerns in European countries with respect to gender inequality in higher or tertiary education: horizontal and vertical segregation. Firstly, almost all countries are concerned about horizontal segregation, that is, the problem that women and men choose different fields of study in higher education, with women being under-represented in engineering and science. Secondly, a number of countries – namely the Flemish Community of Belgium, the Czech Republic, Germany, Greece, Spain, France, the Netherlands, Austria, Slovenia, Sweden, the United Kingdom and Norway – are also concerned about vertical segregation. This problem is related to the currently existing 'glass ceiling' in tertiary education: while women outnumber men amongst higher education graduates, they are slightly under-represented at doctoral level, and there are even fewer women amongst academic staff in universities. These two issues and the policies intended to deal with them are discussed in turn.

8.1 Horizontal segregation

Almost all countries are concerned about the fact that the proportion of men and women vary considerably between different areas of study in tertiary education. Despite the relatively small differences between the attainment of girls and boys, especially in the fields of mathematics and science, as revealed by international surveys (see Chapter 2), this pattern of inequality is similar among students and graduates and is fairly consistent throughout Europe. Differences in the choice of academic discipline by young people can be attributed to traditional perceptions of gender roles and identities as well as the wide acceptance of the cultural values associated with particular fields of study. For example, while some fields, especially science and engineering, are widely regarded as 'masculine' and suitable for men, other fields of study, most importantly care-related ones like education or health, are defined as 'feminine' and appropriate for women. This makes it difficult for members of the minority sex to enter these fields without challenging the dominant culture or their own self-perceptions (see also Chapter 1).

Figure 8.1 illustrates existing differences between male and female graduates by field of study. The largely female-dominated fields are education and training, health and welfare and humanities and arts. The exception is Turkey, where due to the relatively low number of female graduates, the only female-dominated fields are education and training (55 % women) and arts and humanities (67 %).

Figure 8.1: Female graduates (ISCED 5-6) in various areas of study as percentage of total graduates in these fields, 2007



A Social science, business and law **B** Health and welfare **C** Engineering, manufacturing and construction **D** Humanities and arts

E Education **F** Science, mathematics and computing **G** Services **H** Agriculture and veterinary science

	EU-27	BE	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU
A	61.8	57.8	64.4	64.7	52.0	52.9	73.1	56.4	65.3	64.3	63.1	55.9	55.5	74.3	74.1	:
B	75.9	75.1	73.3	76.0	81.2	74.6	92.7	79.1	65.0	78.9	72.4	69.8	75.4	90.1	86.7	:
C	25.5	23.2	33.9	24.8	36.2	17.9	34.2	16.2	39.5	26.6	22.5	30.4	18.7	28.7	30.2	:
D	68.9	61.4	68.9	67.8	65.5	73.3	80.8	65.0	69.3	61.9	71.3	74.1	74.0	82.5	78.7	:
E	78.3	75.2	75.7	75.5	73.3	77.8	92.4	76.2	76.8	81.9	71.8	91.9	89.5	91.1	81.7	:
F	40.2	32.9	58.9	38.9	35.7	42.5	43.2	39.7	50.4	35.9	36.1	52.5	37.1	38.8	38.4	:
G	52.6	53.6	49.8	45.2	18.9	55.3	56.3	42.9	43.0	56.6	47.0	50.6	55.9	56.3	46.3	:
H	48.7	52.0	48.8	57.9	39.0	39.3	51.5	54.9	53.1	47.8	36.9	43.9	0.0	53.0	48.3	:

	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	IS	LI	NO	TR
A	71.6	55.8	52.0	59.4	68.9	64.0	64.3	69.1	65.5	69.5	62.0	55.7	60.4	32.3	55.8	47.2
B	81.6	67.1	75.6	71.8	71.2	79.8	69.4	83.1	87.5	87.3	83.0	79.6	90.0	0.0	83.1	66.7
C	24.7	28.7	17.8	18.5	33.4	29.2	32.2	21.1	32.4	22.1	28.9	21.1	32.5	30.4	24.3	22.8
D	71.8	61.5	58.1	65.7	77.1	65.6	69.4	71.8	56.4	76.5	61.3	62.4	68.2	50.0	59.8	50.9
E	80.6	77.5	80.9	79.0	76.7	83.3	86.1	85.0	75.6	84.1	80.6	74.8	84.4	0.0	74.5	55.3
F	29.3	46.1	20.2	32.5	45.4	43.5	61.9	36.4	40.5	44.5	42.9	37.5	35.7	0.0	32.9	45.2
G	61.1	60.0	56.0	61.1	55.2	56.0	41.7	41.7	42.8	72.2	64.8	63.3	87.5	0.0	47.4	27.0
H	49.8	0.0	50.1	48.1	58.3	58.4	40.9	58.5	49.7	54.7	64.6	62.5	48.1	0.0	52.4	52.7

A Social science, business and law **B** Health and welfare **C** Engineering, manufacturing and construction **D** Humanities and arts

E Education **F** Science, mathematics and computing **G** Services **H** Agriculture and veterinary science

Source: Eurostat (data extracted September 2009).

Additional notes

Belgium: Data exclude second qualifications in non-university tertiary education in the Flemish Community and data for the German-speaking community.
Italy: Data exclude ISCED level 5A second and further degrees and ISCED level 6.
Cyprus: The number of students studying abroad accounts for over half of the total number of Cypriot tertiary students. The fields of education in Cyprus are limited.
Liechtenstein: There is no data on Liechtenstein for some fields of study because the majority of pupils/students study and graduate abroad, mainly in Switzerland and Austria (ISCED levels 3 to 6 after obligatory schooling).

In **education and training**, on average, 80 % of graduates are women in the EU-27, and women constitute the majority in all countries analysed. In Estonia, Italy and Latvia, the proportion of women is especially high; only one out of ten graduates in these fields is a man. In the area of **health and welfare**, 76 % of graduates are women and they form the majority in all countries (except Turkey), especially in Estonia, Latvia and Iceland (approximately 90 % or more). The area of **humanities and arts** also has a majority of women graduates – approximately 70 %. In Estonia and Latvia, males make up only one in five of the graduates in this area.

In the area of **social science, business and law**, which have by far the highest number of students and graduates, women are in a slight majority. In the EU-27, on average, approximately 60 % of

graduates are female. In the Baltic countries and Hungary, the proportion of women graduates in these fields is higher than 70 %.

By contrast, in the area of **engineering, manufacturing and construction**, men are markedly dominant; only one out of four graduates is a woman. Men are over-represented in all countries, especially in Germany, Ireland, Cyprus, the Netherlands and Austria, where the proportion of female graduates is less than 20 %. The area of **science, mathematics and computing** is slightly male dominated – approximately 60 % of graduates are men. It is worth noting, however, that in Bulgaria and Romania, the general pattern is reversed with a majority of female graduates in this field.

There are large country variations regarding the gender composition of graduates in the area of **services**, while the **agriculture and veterinary** area has about equal distribution of women and men. However, these areas are rather small, producing less than 5 % of total graduates.

8.1.1 Policies and projects targeting horizontal segregation

Most countries with gender equality policies in higher education have the primary goal of combating horizontal segregation and the gender imbalance in the choice of academic discipline by women and men. Almost all of these policies and projects target girls or women; only a minority of programmes focus on the choices made by boys or men.

There are two main policy instruments aiming at changing the traditional choices made by women (and sometimes men). Firstly, educational or vocational guidance is provided in secondary schools (see Chapter 4). Secondly, there are awareness-raising projects involving higher education institutions. These projects can be initiated or financially supported by ministries or governments. In most cases, their aim is to attract more women to the fields of science, mathematics and computing as well as to engineering, manufacturing and construction. The most common practices include the organisation of university open days or the granting of special awards to female students.

In the **Flemish Community of Belgium**, the department of Economy, Science and Innovation is currently funding a project aimed at increasing the number of women in engineering studies. This project is intended to provide role models for female students and it aims to eradicate the gender stereotyping of engineers. This project runs from 2008 until 2010.

In the **Czech Republic**, the National Contact Centre – Women and Science *(Ženy a věda)* was established in 2001 as a project of the Institute of Sociology of the Academy of Sciences of the Czech Republic, financed by the Ministry of Education, Youth and Sport. The Centre's mission is to contribute to influencing gender discussion in R&D and to shaping science and human resources policy in the Czech Republic, especially with respect to the position of women in science. Furthermore, under the name 'Barriers' a mentoring system project for female secondary school students was piloted in 2009.

In **Germany**, the National Pact for Women in MINT Careers was launched in 2008 as part of the Federal Government's qualification campaign 'Advancement through Education'. The aim is to encourage more girls and women to pursue training, university degrees and careers in the areas of mathematics, information science, the natural sciences and technology (MINT). It includes numerous partners from industry, science, research, politics and the media and operates under the slogan 'Come on, do MINT'. By presenting positive role models, the partners in the Pact are contributing towards reducing the stereotypes associated with these areas of work. At the same time, they have agreed to intensify their efforts to make it easier to balance work and family commitments.

In **France**, the Mission for Parity in Higher Education and Research devises an annual plan of specific measures aimed at encouraging more girls to take science subjects. It monitors the balance between men and women in science careers and ensures that the gender dimension is taken into account in research institutions, programmes and policies in France. It works with associations of women scientists and, in 2004, it signed a framework convention with three of them to encourage more girls to

choose science courses and careers. The website www.elles-en-sciences.org was developed as a result. Furthermore, the Mission organises each year the *Irène Joliot-Curie* Prize, supports specific initiatives as well as regularly publishes numerical indicators, statistics and studies. In addition, in 2005, the engineering colleges set themselves self-imposed targets under a 'Convention to promote gender equality' signed by the Conferences of the *grandes écoles* and the Minister for Parity and Equality at Work.

In **Ireland**, the 'role model' project aimed to encourage more girls to consider studying and working in the non-traditional areas of science, engineering and technology. It was produced by Women in Technology and Science (WITS), a non-governmental network of women professionals who work in the SET sectors, and was funded by the Department of Education and Science. The project also involved supporting, nationally, six third level colleges in running a role model day as a way of increasing the participation of females in SET courses at third level. Furthermore, the Science Foundation Ireland (SFI) launched four programmes to address under-representation of women in Irish science and engineering research. These schemes are intended to encourage and support the development of sustainable mechanisms and practices ensuring that women researchers have an equal opportunity to compete based on their scientific expertise, knowledge and potential.

In **Lithuania**, the *Strategy for Ensuring Equal Opportunity in Science for Men and Women* maps out a number of objectives and measures to establish gender equality in the Lithuanian higher education system. Although the strategy is first and foremost directed towards ensuring gender equity in the Lithuanian science community, the results of the implementation of the strategy are expected to have, in future, a positive impact not only in achieving gender balance in different fields of study but also in creating a gender-neutral learning environment for students of both sexes.

In the **Netherlands**, in the coming years, the Ministry of Education, Culture and Science and *Platform Bèta Techniek* will invest more money in activities aimed at informing and enthusing girls. The *Platform Bèta Techniek* wants targets to be formulated in 2009 for senior secondary vocational education, higher professional education and university education. In addition, as well as focusing on girls in all sectors in education, attention is also given to boys, particularly in relation to teaching programmes (see Chapter 7).

In **Austria**, gender equality is one of the guiding principles for universities implemented in the University Act 2002. An important programme in the country is FIT (*Frauen in die Technik,* 'women in engineering'). The aim of FIT is to inform female students about study options and to encourage interested girls to go for a non-traditional field of study. FIT is coordinated by the Federal Ministry for Education, Arts and Culture and is implemented in six university towns in Austria. Female students in engineering or natural sciences visit schools to promote opportunities in engineering and natural sciences to interested female students. These students also have the option to attend 'information days' at universities and to attend trial lectures, workshops or panel discussions, etc.

In **Poland**, in 2008, a coordinated campaign under the slogan 'Girls, study at technical universities!' *(Dziewczyny na politechniki!)* was run by the Education Foundation *Perspektywy* and the Conference of Rectors of Technical Universities to promote engineering and technology programmes among young women. As part of 'The Open Day – For Girls Only', 14 technical universities prepared special programmes, including classes in laboratories, debates, meetings with women researchers and female students following degree programmes in engineering and science. The campaign was successfully repeated in 2009.

In the **United Kingdom**, there are national initiatives to counter gender imbalance in certain subject areas in the tertiary sector, notably science and engineering. One of the best known is Women into Science and Engineering (WISE). The WISE campaign collaborates with a range of partners to encourage girls of school age to value and pursue science-, technology-, engineering- and construction-related courses in school or college as well as to move on into related careers.

In **Norway**, attributing extra points for entry into universities and university colleges is an instrument used in relation to fields of study with a gender imbalance. The Ministry has established national centres in mathematics and in science which, together with other partners, have a mandate to encourage and recruit students, especially women, into science subjects.

8.2 Vertical segregation

There are notable gender differences regarding participation in and graduation from tertiary education (ISCED 5-6). In general, more women than men are enrolled in higher education (see EACEA/Eurydice 2009a, Figures C16 and F6). The exception is Turkey, where only 43 % of students are women. On average in the EU-27, women comprise 55 % of students enrolled at tertiary level; in Iceland the figure rises to 64 %. Across Europe even higher proportions of women complete their studies and graduate: 59 % of graduates are female. In Estonia and Latvia, the proportion of females who graduate is even higher, approximately 70 %.

The average proportion of women enrolled in tertiary education has been gradually increasing over recent years in the EU-27 (2 % increase from 1998 to 2006). This pattern is similar in most European countries, with an increase of more than 5 % in the Czech Republic, Malta, Romania and Slovakia. Bulgaria and Cyprus were the only countries where female participation rates decreased between 1998 and 2006 (7 % and 4 % respectively). The proportion of female graduates rose even faster, with an increase of 4 % on average across the EU-27 from 1998 to 2006; in Germany, Hungary and Iceland the increase was more than 8 %.

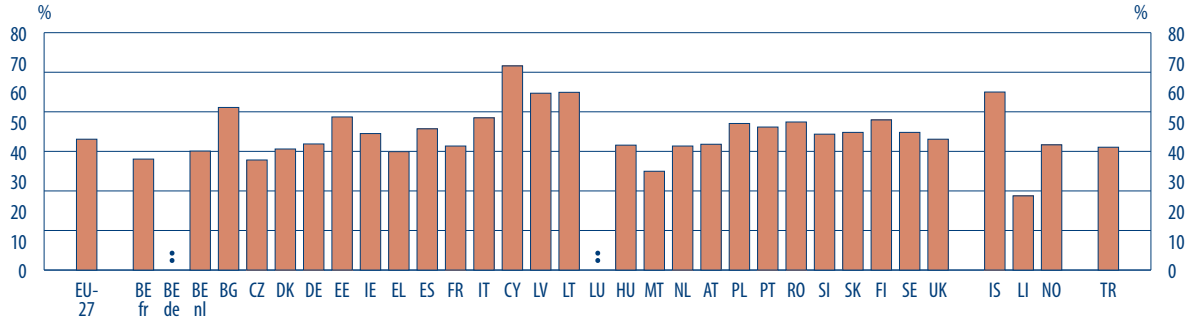
This increase in the proportion of female graduates has not been seen as problematic in the vast majority of countries, primarily since the differences between the participation rates of women and men are not very big in most countries. Nevertheless, a report by the Higher Education Policy Institute (HEPI), an independent think-tank in the United Kingdom, highlights areas of possible concern for the future, arguing that this trend might have the potential to 'give rise to adverse stereotypes, particularly for men from disadvantaged socio-economic backgrounds' (HEPI 2009, point 101). At the national level, Finland and Sweden are somewhat concerned about this issue.

> In **Sweden**, in January 2009, the Delegation for Gender Equality in Higher Education was commissioned with the task of supporting and proposing measures that promote gender equality in higher education. This body has been asked to pay special attention to the issue of gender-related choice of academic courses as well as to the question of a decline in the proportion of men that apply for university programmes and courses. The delegation will report to the Swedish government no later than 1 January 2011.

Nevertheless, despite these overall tendencies, comparing the proportion of women among graduates at ISCED level 5 and ISCED level 6 (i.e. at doctoral level) reveals that women are still slightly under-represented among doctoral graduates. As Figure 8.2 shows, the percentage of female doctoral graduates is on average 44 % in the EU-27, and it is 50 % or higher only in Bulgaria, Estonia, Italy, Cyprus, Latvia, Lithuania, Romania, Finland and Iceland. The proportion of women with a doctorate is below 40 % in the French Community of Belgium, the Czech Republic, Malta and Liechtenstein. Nevertheless, in the case of Cyprus, Malta, Iceland and Liechtenstein, due to the very low absolute number of doctoral graduates, data on the proportion of women have to be interpreted carefully. In Turkey, interestingly, the proportion of women with doctorates is not much lower (41 %) than that of female graduates at ISCED level 5. Overall, these percentages have been relatively stable since 2004 but with a slightly increasing tendency. In Denmark, Slovenia and Finland, there has been an increase of more than 10 %, while Estonia is the only country where the proportion of women with doctorates has decreased since 2004.

Women are even more under-represented among professors and academic staff in universities. As Figure 8.3 shows, the percentage of women among teaching staff at ISCED 5-6 levels is below 50 % in all countries except Latvia and Lithuania. The proportion of female teachers and professors is particularly low in the Czech Republic, Germany, Greece, France, Italy, Hungary, Malta, the Netherlands, Austria and Slovenia. Nevertheless, it has to be noted that in the majority of countries, the percentage of women among academic staff has been slowly increasing since 1998. There has been more than a 30 % increase in the Netherlands, Austria, Slovakia, Slovenia and the United Kingdom. The countries in which the relatively low proportion of female teachers in higher education has been fairly stable are Greece, France and Hungary. It has stabilised at a comparatively higher level in Poland and Iceland. In two countries, namely in the Czech Republic and Estonia (this latter is according to data from 2004) the proportion of women among academic staff has decreased since 1998 (Eurydice calculations based on Eurostat, 2009).

Figure 8.2: Percentage of female doctoral graduates at ISCED level 6, 2007



EU-27	BE fr	BE de	BE nl	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT
44.1	37.4	:	40.1	54.8	37.1	40.8	42.5	51.6	46.0	39.9	47.6	41.8	51.3	68.8	59.6	59.9

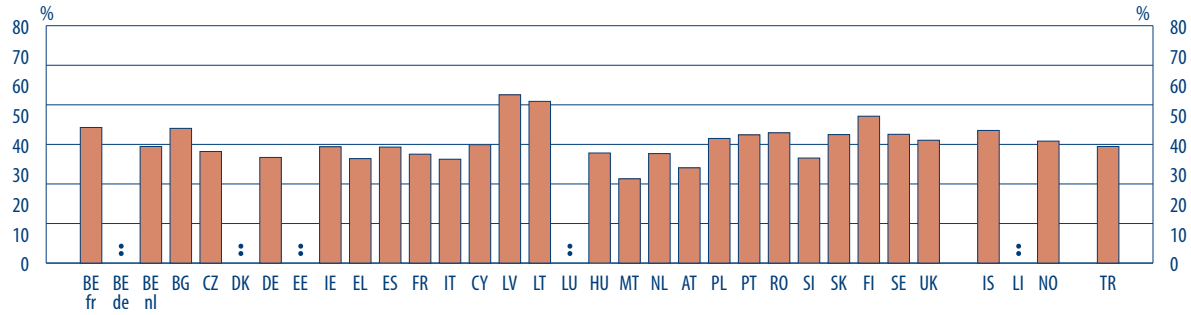
LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	IS	LI	NO	TR
:	42.1	33.3	41.8	42.4	49.4	48.2	49.9	45.8	46.4	50.6	46.4	44.1	60.0	25.0	42.2	41.4

Source: Eurostat (data extracted September 2009).

Additional note

Italy and **Liechtenstein**: Data is from 2006.

Figure 8.3: Women teachers/academic staff as percentage of all teachers/academic staff at ISCED levels 5-6, 2007



BE fr	BE de	BE nl	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU
45.7	:	39.3	45.4	37.6	:	35.6	:	39.2	35.2	39.1	36.7	35.0	39.9	56.7	54.5	:
HU	**MT**	**NL**	**AT**	**PL**	**PT**	**RO**	**SI**	**SK**	**FI**	**SE**	**UK**		**IS**	**LI**	**NO**	**TR**
37.1	28.4	36.9	32.1	42.0	43.2	43.9	35.4	43.3	49.5	43.4	41.4		44.7	:	41.1	39.3

Source: Eurostat (data extracted September 2009).

Additional notes

Czech Republic and **Malta**: Data is from 2006.
Finland: At ISCED levels 5-6 the data on academic staff includes only teaching personnel. Research personnel are excluded. Previously research personnel were also included in the academic staff at ISCED levels 5-6.
Sweden: Postgraduate students performing teaching tasks are included in academic staff.

Figure 8.3 depicts academic staff regardless of academic rank. Data on the seniority of academic staff shows that the proportion of women is much lower in higher academic positions across Europe: 44 % of junior, 36 % of middle-range and only 19 % of senior academic staff were women in the EU-27 in 2007 (European Commission 2009b, p. 75). Most recently available national statistics illustrate this phenomenon referring to national categories of academic ranking.

In the **Flemish Community of Belgium**, while the proportion of women among assistant academic personnel is 52 %, among scientific personnel it is only 44 %, and women constitute less than one fifth (19 %) of autonomous academic personnel (*zelfstandig academisch personeel*, including all professors) (VLIR 2008a, p. 11).

In **Spain**, according to data from the 2006/07 academic year, only 36 % of the teaching staff in public universities are women, and the proportion of female professors – the highest and most well-paid position – is only 14 % (IFIIE & Instituto de la Mujer, 2010).

In **the Netherlands**, according to data from 2007, 30 % of lecturers, 17 % of senior lecturers and only 11 % of professors are female in universities (Dutch Ministry of Education, Culture and Science 2009, p. 131).

In **Austria**, only 17 % of university professors are female although women represent 40 % of university assistants (winter term 2008) (BMWF, 2009).

In the **United Kingdom**, in the academic year 2007/08, only 14 % of university vice-chancellors and 19 % of professors were women (HESA, 2009).

Thus, the proportion of women among the teaching staff in higher education institutions declines with every step on the academic career ladder. Although this can partly be explained by the fact that large groups of women entered universities and chose academic careers only relatively recently, this 'glass ceiling' for women may also be a result of the dominant masculine culture that exists generally in

academia. Nevertheless, it is only a minority of countries that seem to be concerned about this phenomenon.

8.2.1 Policies and projects targeting vertical segregation

Policies or projects targeting vertical segregation at tertiary education level exist only in about one third of the analysed countries. Policy instruments in this case usually involve providing support to female academics. This support can be financial, with additional resources given to universities to promote the employment of female researchers and teaching staff. Instruments may include funding formulas that take into account the proportion of female professors or performance contracts that link the achievement of strategic objectives to funding (for more details, see Eurydice, 2008a). In addition, career guidance and consultancy can be offered to young female academics. Finally, countries can also implement policies or provide funding for easing work-life balance with the provision of childcare facilities or with positive discrimination policies encouraging women to return to work after a career break.

The most comprehensive policy measures can be found in the **Flemish Community of Belgium.** In general, universities in the Flemish Community of Belgium implement several policies that target gender inequalities from career coaching, to transparent recruitment practices and policies improving work-life balance (promotion of flexible working hours, childcare facilities, and women's return after a career break). Furthermore, in light of women's under-representation in management and higher academic positions, the Minister of Education and Training recommends that female researchers should be encouraged to become members of research councils, faculty councils and appointment commissions. Another action is the design and implementation of a system of evaluation taking into account the quality of research rather than quantitative indicators. Lastly, a new financing system for universities was implemented in 2008, in which financial resources are dependent on an increase of female professors (VLIR, 2008b).

As far as specific projects are concerned, in 2008, within the working group of Equal Opportunities of the Flemish Interuniversity Council, national partners developed their own human resources theme. The resulting 'Equality Guide – HR Instruments for Equal Opportunities at Universities' encompasses a manual to combat inequalities by offering gender-sensitive Human Resources Management instruments and to promote equal opportunities in universities' career and personnel management.

In **Germany**, in order to increase the proportion of female scientists in leading positions in universities, the Federal Ministry of Education and Research supports targeted projects within the framework of its Gender Mainstreaming Strategy in Science. Such projects include the establishment of a 'Center of Excellence Women and Science' (CEWS) which serves as the national coordination, information and counselling agency for scientific and political establishments, institutions, women scientists, and companies. The Federal Ministry also supports research institutions that offer their employees childcare facilities.

Furthermore, since 2007 under the framework of the 'Women Professors Programme' of the Federal Government and the *Länder*, funding is only provided to higher education institutions if they present an equal opportunities policy with their application and if this policy is approved. Almost half of all state-run higher education institutions in Germany submitted their equal opportunities policies in the two application rounds, and so far more than 100 of them have been approved.

In **Greece**, every higher education institution has to prepare a strategic plan that horizontally regulates areas such as the institutions' mission, staff recruitment, personnel management, research policy and other curricular, infrastructural and organisational aspects. In these areas, one major issue for the higher education institutions to consider is the promotion of equal opportunities and sex equality.

In **Austria**, in order to break the so-called 'glass ceiling', the responsible Ministry started to take a variety of measures, for example, scholarships for women; financial support for publications; child care facilities at universities; coordination offices for Women and Gender Studies. In addition, legal measures have been implemented such as the Working Committee on Equal Treatment at Universities or the Decree for Affirmative Action Plan in the Sphere of the Federal Ministry, and programmes such as the White Paper for Affirmative Action in Science. In 2005, a program was launched to increase the number of female professors at universities ('*Excellentia*'). The aim of the program is to double the share of female professors from 13 % (2003) to 26 % in 2010. Universities get

a bonus of 33 000 € for each additional female professor (for new appointments which increase the absolute number as well as the share of women).

In the **Netherlands**, the Ministry of Education, Culture and Science started the Aspasia Programme, which has been operated by the NWO (Netherlands Organization for Scientific Research) since 2004. This programme offers subsidies of € 100 000 to University Boards promoting specific female laureates as university teachers or professors. In addition, the Ministry provided a subsidy to strengthen the national network of female professors (LNVH) ([1]). The aim of the LNVH is to promote a proportional female representation within the university community to which end it has developed a range of activities. The LNVH monitors women's representation in scientific and management posts and disseminates the results.

In **Slovenia**, policy measures target both the improvement of the position of women in science and work-life balance. For example, the rules about (co)financing basic, applicative and postdoctoral projects take the period of maternity leave into account in the case of project leader applications, e.g. as a factor that influences the publishing record or the age of candidates (there is often an age limit in the case of post-doctoral projects, which is extended to take account of the period of maternity leave).

In the **United Kingdom** (**England, Wales** and **Scotland**), the Gender Equality Duty and in **Northern Ireland** the Equality Duty applies to all functions of higher education institutions with respect to both staff and students.

In **Liechtenstein**, in 1999, an office for equal opportunities was launched at the *Hochschule Liechtenstein*. Its aim is to foster an equal gender balance in the areas of management, administration, teaching and research. They offer consultancy on gender issues and help women solving gender-related problems (pregnancy, childcare, scientific career, financial support, sexual harassment, etc). Although they focus on female clients, their service is also open to men.

In **Norway**, all higher education institutions are obliged to adopt plans for gender equality. In addition, the Committee for Mainstreaming – Women in Science established by the Ministry of Education and Research supports and provides recommendations on measures that can contribute to the mainstreaming of gender equality efforts within higher education institutions as well as within the research sector. Furthermore, the government also established an incentive scheme for increasing the proportion of women in senior academic positions within mathematics, natural science and technology. The intention is to reward universities and university colleges when they employ women in these positions. The government will also look into measures to maintain and develop the expertise of women working in male-dominated working environments so that they qualify for higher level positions.

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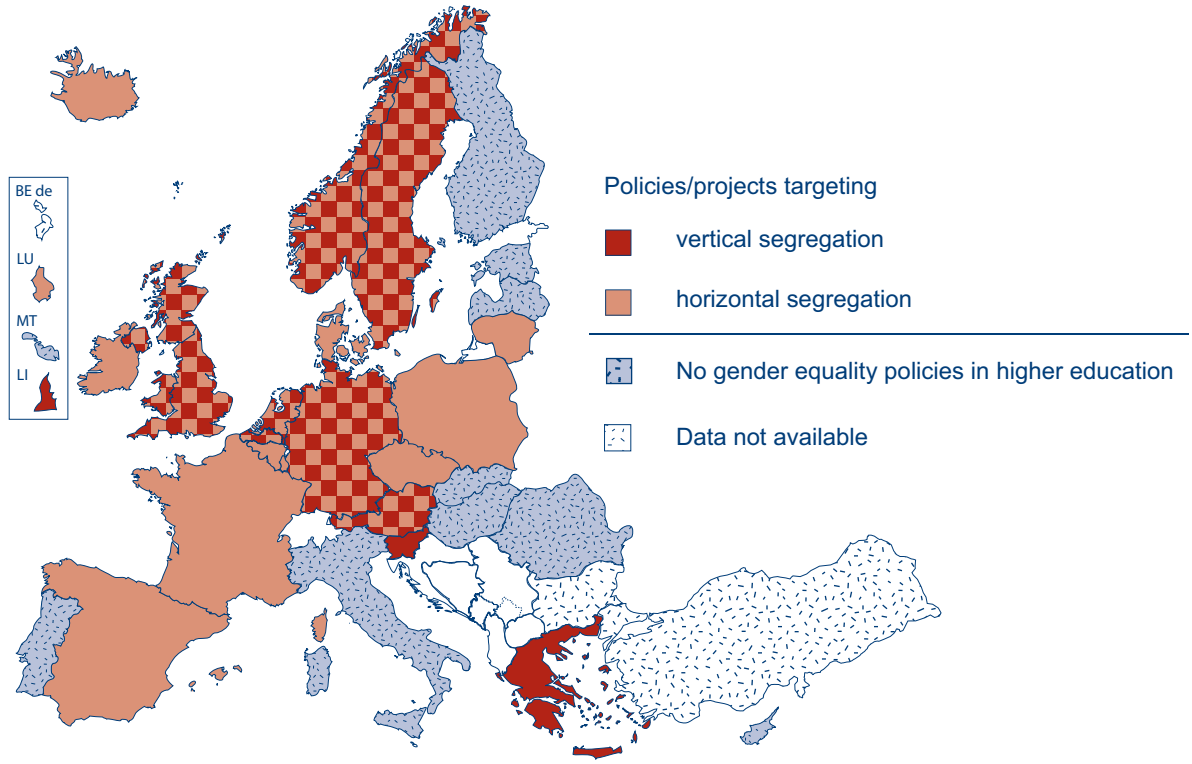
([1]) See: http://www.lnvh.nl/

To sum up, Figure 8.4 shows which countries address the issues of horizontal and vertical segregation. The countries having policies in place for both issues are the Flemish Community of Belgium, Germany, the Netherlands, Austria, Sweden, the United Kingdom and Norway.

Figure 8.4: Gender equality policies or projects in higher education, 2008/09



Source: Eurydice.

Additional note

Ireland: Information not verified at national level.

CONCLUSION

From the onset of second-wave feminism in the 1970s, different policies and strategies have been proposed to stimulate change in the climate and ethos of schools and in education practices with respect to gender issues (Chapter 1). While many of these were small-scale and piecemeal, taken together with supporting legislation and reforms, they have had considerable impact. It could be argued that these strategies and initiatives, often focusing on female educational disadvantage, have significantly altered gender patterns in education over the last 30 years in many countries. Nevertheless, gender inequality is still an issue today, although it cannot be regarded any longer as a problem which concerns only girls and women. The merit of recent discussions on gender is that the focus has shifted from one which, primarily, questions the stereotyping of women to one which also questions the concept of masculinity.

This study explored whether and how European countries address the issue of gender equality through their education policies. It showed that while most countries have similar concerns, they target different issues and to differing degrees. This conclusion first summarises the main priorities of gender equality policies in Europe and then outlines the possible directions that policy measures might move towards in order to counterbalance existing inequalities.

Gender equality concerns targeted by European countries

Gender equality has multiple definitions and has been adapted to various contexts. This study shows that gender equality is addressed differently in European countries: it is embodied in legislation in different ways and to varying degrees and it has a variety of definitions. In most European countries, gender equality in education is understood to mean equal treatment and equal opportunities on the one hand, and equality of outcomes on the other.

The analysis of gender equality policies in European countries has shown that their main and overarching aim is to **challenge** traditional and persistent **gender roles and stereotypes** (Chapter 3). European countries apply different measures to reach this goal such as vocational guidance, gender-sensitive teaching or curricula revision (Chapters 4 and 8). However, European schools today are far from using all potential means to eradicate traditional gender roles. What boys and girls can and should do in their future professional (and personal) lives is still very much shaped by traditional concepts of gender roles.

One potentially weak point of current measures is the dominant focus on girls. For example, while girls' engagement with technology receives much attention, there is less focus on boys and their access to care-related professions. However, gender roles can only be effectively challenged when change goes in both directions.

In relation to breaking down traditional gender stereotypes, **targeting gender-based attainment patterns** has been found to be a specific policy priority. This is particularly connected to the under-achievement of boys in schools. However, as Chapter 5 showed, few national strategies are directly concerned with this.

A second important policy priority specifically defined in several countries is combating **gender-based violence and harassment**. However, most actions seem to be limited to individual projects and initiatives often linked to the involvement of NGOs and not to specific national strategies (Chapter 4).

Finally, enhancing the **representation of women in decision-making positions** in education is an important policy priority. It is not really a new issue, as the participation of women in management positions in general has been a political concern and of importance in society for quite some time. Policies with this focus aim at promoting more female school heads and providing access to more senior positions in higher education (Chapters 7 and 8). Looking at the statistics, most countries still have a long way to go to achieve gender equality in this regard.

Certainly, there are differences between European countries in the degree to which they focus on these different policy priorities. This is partly due to the fact that different countries began their engagement with gender equality concerns and policies at different times, with relatively new EU member states from Central Eastern Europe being among the last to embrace this issue. As a result, many of these countries either have no policy frameworks for gender equality in education or their frameworks are less comprehensive, often focusing on policies to combat gender inequality in the labour market. In contrast, some countries that have been concerned about gender inequalities for decades have since moved towards targeting either more specific or more general inequalities. For example, Denmark has moved towards broader equality mainstreaming instead of gender mainstreaming; this is also to be implemented in the United Kingdom (Chapter 3). Such developments demonstrate that the equality of opportunity is a multi-faceted issue which needs multiple policy responses.

Possible measures for tackling gender inequalities

The issues mentioned above are part of a whole complex pattern in which gender and its cultural connotations interact. Research has been exploring ways to address these equality issues both at school and at policy level. The role of this section is to highlight measures that can potentially respond to these policy issues.

Teaching methods, teachers and school organisation

Challenging existing gender roles and stereotypes in schools is not an easy task either for policy-makers or for practitioners in the field (teachers, school managers, counsellors, etc.). A measure most often mentioned in the literature is eliminating sex-stereotyping through revision of school texts, reading and display materials, examination questions, etc. Others include increasing focus on teacher-led work, switching to mixed-sex pairing or single-sex grouping where appropriate, or offering greater learning support. Teachers and school managers also need practical guidance on the legal context for gender equality and on how to develop an appropriate school climate as well as information on teaching, subject content and assessment (Myers et al., 2007).

In terms of subject organisation and time-tabling in schools, research shows that the way subjects are offered to students may change gender patterns in participation. The compulsory character of 'typically' male or female subjects or a restricted choice may influence patterns of take-up (Smyth & Darmody, 2007).

The development of good teacher-pupil relations is a key factor in generating gender change in schools and, in particular, encouraging teachers to be non-discriminatory towards and respectful of their pupils. This may be achieved in a number of ways: for example, through the development of whole-school policies on gender equality, the monitoring of classroom dynamics and levels of attention and support given to pupils.

However, as pointed out in a recent research review on gender and education, the attitudes of teachers and teacher educators to gender issues are often conservative and reproduce traditional gender stereotyped ideas and expectations. Most teachers do not learn how to promote gender equality in schools. Therefore, all teacher education programmes should have a core module on gender equality. Teachers should be assessed in their equality practices during pre-service and in-service education programmes (European Commission 2009c, p. 81).

Concerning the potential advantages of having more male teachers in schools, there is no clear evidence of the beneficial influence of a more balanced gender distribution in numerical terms among teachers on pupil performance. Only (female and male) teachers challenging their own gender roles as well as their pupils' might trigger change (DCSF, 2008). Researchers criticise current trends of constructing the overwhelmingly 'female' teaching profession as favouring girls or being ultimately responsible for boys' under-achievement (Skelton, 2002). Labelling teaching as 'feminine', in particular at pre-primary and primary levels, often means, however, that the profession lacks status and recognition which is reflected in salary and career conditions (Mills et al., 2004). Nevertheless, attracting more men into care-related professions and thereby counteracting gender imbalances is still a potential direction policy-makers, schools and guidance counsellors should consider. This evidently goes hand in hand with promoting more women into school management positions and challenging traditional gender roles for both.

Analysis and interpretation of performance data

Collecting and analysing up-to-date information on current gender patterns, especially given the speed of change in gender relations in recent times has been viewed as beneficial to gender equality (Arnot et al., 1999; Sukhnandan et al., 2000). Thus, government, local authorities and schools are each expected to collate and analyse performance data, such as patterns of under-achievement, other patterns where gender differences occur (e.g. drop-out, exclusions or truancy), pupils at risk and also to identify additional factors contributing to gender difference.

In general, data shows that there are not many initiatives in place to address gender patterns in achievement. This might be because the relationship between cause and effect is complex in this context since attainment is influenced by a series of factors. Interestingly, many countries have developed measures targeted at pupil groups with low social status. Although these initiatives taken alone might not be sufficient to tackle all forms of under-achievement, they are nevertheless crucial.

Results of both international and national surveys (Chapters 2 and 5) show how important the impact of social status is in this context.

The interplay between gender, social class and ethnic background affects behaviour and consequently pupil performance. A policy focus on only one source of social inequality might hide the complexity of experiences within a specific group and lead to over-simplistic solutions (Tinklin et al., 2003).

Improving the school sub-culture

Attempting to transform the negative impact of certain school sub-cultures and poor attitudes to school-work of boys or certain groups of boys (and sometimes girls) might also be contributing positively towards gender equality. Strategies include encouraging more mature behaviour and attitudes towards study, and facilitating a school culture where (male) students can achieve academically without fear of ridicule or disruptive behaviour. Warrington et al. (2006) identify key components for schools such as establishing an expectation of high levels of self-discipline, a commitment to valuing diversity through curriculum content and school activities and an emphasis on pride in work and behaviour. Members of staff are expected to make pupils aware that their progress in and satisfaction with their school is valued.

Parental involvement

The support of parents is vital to the promotion of gender equality in schools. Gender equality has been found to be enhanced by parents' involvement in the general work of schools, participation in specific gender projects and help in developing a more equity-orientated school culture (Condie et al., 2006). It is also important to create spaces and opportunities where less privileged parents have a voice and representation; this might be achieved by the provision of different forms of support such as information booklets, drop-in sessions and discussion groups (Maguire, 2007). This is particularly important because – as already pointed out in Chapter 1 – parents are a link to the world outside, which does not necessarily provide equal gender opportunities.

Linking evaluation and funding to gender equality criteria

Gender equality issues might be included in lists of criteria for school evaluation. The inclusion of a gender perspective in school development plans, for example, or the improved representation of women in school management bodies might here be considered as criteria.

Linking gender equality in numerical terms to funding of higher education institutions, as is the case in some European countries, might be an effective approach for enhancing the representation of women (see Eurydice, 2008a). This can take the form of introducing gender equality criteria into funding formulas for calculating public grants for higher education institutions, as well as into 'performance contracts' (Eurydice 2008a, p. 57). For example, institutions need to include the gender composition of their staff in their strategic objectives linked to funding.

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There are, of course, many more measures to promote gender equality in schools and higher education institutions. Not all of them may be equally important everywhere, depending largely on the state of gender equality in a given country. Evidently any strategy or measure being piloted or adopted in this field needs to be monitored and evaluated regularly and adapted according to changing circumstances.

Looking at the comparative overview of policy concerns identified and measures taken, we can see that although the scale of individual initiatives in European countries is large, many countries lack an overall strategy and implementation plans which would form part of an effective gender equality policy.

Education is a powerful instrument in changing attitudes and behaviour. Education systems, therefore, play an important role in fostering equal chances for everyone and in combating stereotypes; schools have a duty to provide all children with the opportunity to discover their own identity, strengths and interests regardless of traditional gender expectations.

GLOSSARY

Country codes

EU-27	European Union
BE	Belgium
BE fr	Belgium – French Community
BE de	Belgium – German-speaking Community
BE nl	Belgium – Flemish Community
BG	Bulgaria
CZ	Czech Republic
DK	Denmark
DE	Germany
EE	Estonia
EL	Greece
ES	Spain
FR	France
IE	Ireland
IT	Italy
CY	Cyprus
LV	Latvia
LT	Lithuania
LU	Luxembourg
HU	Hungary
MT	Malta

NL	Netherlands
AT	Austria
PL	Poland
PT	Portugal
RO	Romania
SI	Slovenia
SK	Slovakia
FI	Finland
SE	Sweden
UK	United Kingdom
UK-ENG	England
UK-WLS	Wales
UK-NIR	Northern Ireland
UK-SCT	Scotland
EFTA/EEA countries	The three countries of the European Free Trade Association which are members of the European Economic Area
IS	Iceland
LI	Liechtenstein
NO	Norway

Statistical code

: Data not available

Glossary

International Standard Classification of Education (ISCED 1997)

The International Standard Classification of Education (ISCED) is an instrument suitable for compiling statistics on education internationally. It covers two cross-classification variables: levels and fields of education with the complementary dimensions of general/vocational/pre-vocational orientation and educational/labour market destination. The current version of ISCED 97 (UNESCO-UIS, 2006) distinguishes seven levels of education. Empirically, ISCED assumes that several criteria exist which can help allocate education programmes to levels of education. Depending on the level and type of education concerned, there is a need to establish a hierarchical ranking system between main and subsidiary criteria (typical entrance qualification, minimum entrance requirement, minimum age, staff qualification, etc.).

ISCED 0: Pre-primary education

Pre-primary education is defined as the initial stage of organised instruction. It is school- or centre-based and is designed for children aged at least 3 years.

ISCED 1: Primary education

This level begins between 5 and 7 years of age, is compulsory in all countries and generally lasts from four to six years.

ISCED 2: Lower secondary education

It continues the basic programmes of the primary level, although teaching is typically more subject-focused. Usually, the end of this level coincides with the end of compulsory education.

ISCED 3: Upper secondary education

This level generally begins at the end of compulsory education. The entrance age is typically 15 or 16 years. Entrance qualifications (end of compulsory education) and other minimum entry requirements are usually needed. Instruction is often more subject-oriented than at ISCED level 2. The typical duration of ISCED level 3 varies from two to five years.

ISCED 4: Post-secondary non-tertiary education

These programmes straddle the boundary between upper secondary and tertiary education. They serve to broaden the knowledge of ISCED level 3 graduates. Typical examples are programmes designed to prepare pupils for studies at level 5 or programmes designed to prepare pupils for direct labour market entry.

ISCED 5: Tertiary education (first stage)

Entry to these programmes normally requires the successful completion of ISCED level 3 or 4. This level includes tertiary programmes with academic orientation (type A) which are largely theoretically based and tertiary programmes with occupation orientation (type B) which are typically shorter than type A programmes and geared for entry into the labour market.

ISCED 6: Tertiary education (second stage)

This level is reserved for tertiary studies that lead to an advanced research qualification (Ph.D. or doctorate).

Definitions

Correlation coefficient: The degree of association between two variables, of which the values may vary within the limits from -1 to +1. Negative values of the correlation coefficient reflect an inverse relationship between the two variables: the values of one variable decrease as the values of the other variable increase. For instance, the coefficient of variation between the age of an individual and his remaining life expectancy tends to -1. When the values of two variables increase or decrease more or less simultaneously, the correlation coefficient is positive. For instance, there is a positive correlation between the size of an individual and the size of his feet. The closer a correlation approaches -1 or +1, the stronger the relationship between the two variables. A correlation coefficient with a value of 0 reflects the absence of any relationship between the two variables.

Gender: The socially constructed roles, behaviours, activities, and attributes that a given society considers appropriate for men and women (WHO, 2009)

Gender mainstreaming: The (re)organisation, improvement, development and evaluation of policy processes, to ensure that a gender equality perspective is incorporated at all levels and stages of all policies by those normally involved in policy making (Council of Europe, 2007).

Harassment: Where an unwanted conduct related to the sex of a person occurs with the purpose or effect of violating the dignity of a person and of creating an intimidating, hostile, degrading, humiliating or offensive environment ([1]).

Horizontal segregation: Refers to the phenomenon that women and men are concentrated in different types of vocational training courses or in different fields of study in higher education.

Multilevel regression models: Allow variance in outcome variables to be analysed at multiple hierarchical levels, whereas in simple linear and multiple linear regression all effects are modelled to occur at a single level. Student data are considered as nested within classes and within schools. Such models lie on assumption that the performance of students within the same class or school may be correlated. These correlations must be taken into account for correct interpretations. By means of these models, it is possible to differentiate between the impact of contextual variables depending on whether they relate to schools or the students within them. At their simplest, such models are used to subdivide the total variance in student performance into a between-school variance and a student variance within schools.

Sex: Refers to the biological and physiological characteristics that define men and women (WHO, 2009).

([1]) Directive 2002/73/EC of the European Parliament and of the Council of 23 September 2002 amending Council Directive 76/207/EEC on the implementation of the principle of equal treatment for men and women as regards access to employment, vocational training and promotion, and working conditions, OJ L 269, 5.10.2002, p. 17.

Simple linear regression: A linear regression in which there is only one covariate (predictor variable). The relationship between one variable and another variable, called the dependent variable, is modelled by a least squares function. Simple linear regression on dual categorical variable shows differences in average values of the dependent variable. For example, simple linear regression predicting achievement by gender shows gender differences in average achievement levels.

Standard deviation: This measures the dispersion or spread in a distribution with respect to the mean. In PISA surveys the score average of OECD countries is set at 500 points, while the standard deviation is 100. A 50 point difference in score thus indicates a difference in 0.5 of standard deviation.

Standard error: The standard deviation of the sampling distribution of a population parameter. It is a measure of the degree of uncertainty associated with the estimate of a population parameter inferred from a sample. Indeed, due to the randomness of the sampling procedure, one could have obtained a different sample from which more or less different results could have been inferred. Suppose that, on the basis of a given sample, the estimated population average was 10 and the standard error associated with this sample estimate was two units. One could then infer with 95 % confidence that the population average must lie between 10 plus and 10 minus two standard deviations, i.e. between 6 and 14.

Statistical significance: Refers to 95 % confidence level. For example, a significant difference means that the difference is statistically significant from zero at 95 % confidence level.

Variance: A measure of dispersion, averaging the squared distance of its possible values from the expected value (mean). The unit of variance is the square of the unit of the original variable. The positive square root of the variance, called the **standard deviation**, has the same units as the original variable and can be easier to interpret for this reason.

Vertical segregation: Refers to the phenomenon that while women outnumber men amongst higher education graduates, they are slightly under-represented at doctoral level, and there are even fewer women amongst higher ranking academic staff in universities. Thus, vertical segregation refers to the under-representation of women at higher levels of the professional hierarchy.

TABLE OF FIGURES

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ANNEXES

Table 1: Relative risk scoring at the lowest proficiency levels (Level 1 or below) in reading, mathematics and science, by gender for 15 year-old pupils, 2006

	READING		MATHEMATICS		SCIENCE	
	Rate	Standard error	Rate	Standard error	Rate	Standard error
EU-27	**1.74**	0.04	**0.90**	0.02	1.02	0.02
BE fr	**1.91**	0.21	1.15	0.15	1.18	0.14
BE nl	**1.83**	0.21	0.91	0.13	1.06	0.13
BE de	**2.10**	0.42	1.04	0.18	1.09	0.26
BG	**1.51**	0.09	1.06	0.05	**1.22**	0.09
CZ	**1.82**	0.20	**0.83**	0.08	0.83	0.09
DK	**1.83**	0.22	**0.79**	0.09	0.94	0.07
DE	**1.80**	0.13	**0.81**	0.06	0.94	0.09
EE	**2.87**	0.35	1.14	0.15	1.29	0.18
IE	**2.32**	0.21	1.02	0.07	**1.41**	0.12
EL	**1.71**	0.08	0.97	0.05	0.99	0.06
ES	**1.65**	0.13	0.99	0.07	1.08	0.08
FR	**2.16**	0.27	0.89	0.10	1.14	0.11
IT	**1.65**	0.10	**0.85**	0.05	1.02	0.06
CY	x	x	x	x	x	x
LV	**2.36**	0.21	0.94	0.07	**1.21**	0.09
LT	**2.08**	0.15	1.00	0.07	**1.19**	0.10
LU	**1.62**	0.11	**0.86**	0.06	0.99	0.08
HU	**2.07**	0.21	0.97	0.09	1.07	0.12
MT	x	x	x	x	x	x
NL	**1.58**	0.18	**0.77**	0.08	0.89	0.09
AT	**1.79**	0.23	**0.76**	0.07	0.87	0.11
PL	**2.20**	0.18	0.93	0.05	1.04	0.06
PT	**1.57**	0.10	**0.87**	0.05	0.98	0.07
RO	**1.46**	0.07	0.94	0.04	1.06	0.05
SI	**3.21**	0.24	0.94	0.08	**1.22**	0.09
SK	**1.74**	0.16	**0.83**	0.07	0.99	0.10
FI	**5.37**	1.54	1.00	0.17	**1.55**	0.28
SE	**2.14**	0.20	0.96	0.08	1.11	0.10
UK-ENG/WLS/NIR	**1.72**	0.11	**0.87**	0.07	1.00	0.08
UK-SCT	**1.65**	0.19	0.85	0.09	1.05	0.14
IS	**2.27**	0.22	**1.20**	0.10	**1.19**	0.08
LI	1.63	0.54	0.80	0.30	1.06	0.44
NO	**1.97**	0.14	0.99	0.07	1.14	0.08
TR	**1.91**	0.16	0.95	0.05	**1.18**	0.07

Source: OECD, PISA 2006 database.

Explanatory note

1 indicates equal chances for males and females, <1 females have greater risk, >1 males have greater risk. Bold indicates significant differences (p<.005).

For further information on the PISA survey, see the Glossary.

Table 2 (to Figure 2.3): Percentage of explained variance of reading, mathematics and science achievement by gender, index of economic, social and cultural status, index of immigrant background and combined indexes for 15 year-old pupils, 2006

	Reading				Mathematics				Science			
	A	B	C	D	A	B	C	D	A	B	C	D
EU-27	3.70	13.48	0.54	0.29	0.30	15.93	0.62	0.98	0.01	16.27	0.92	1.03
BE fr	5.28	12.20	2.54	3.71	0.00	12.94	4.77	5.82	0.06	14.86	3.53	4.86
BE de	2.56	5.70	3.10	0.00	0.34	5.14	7.10	0.00	0.29	6.42	5.73	0.00
BE nl	2.52	13.65	3.37	2.56	0.30	15.54	2.76	2.51	0.03	16.93	2.49	2.48
BG	6.02	21.55	0.06	0.59	0.00	22.03	0.17	0.00	0.40	23.42	0.04	0.22
CZ	4.31	12.51	0.67	0.00	0.20	16.06	0.31	0.08	0.04	15.14	0.32	0.21
DK	3.15	7.98	1.33	2.74	0.28	9.44	1.33	3.32	0.14	10.05	1.79	3.85
DE	4.62	13.26	1.99	2.59	0.65	15.51	1.97	3.93	0.02	14.45	3.46	4.61
EE	7.91	9.14	2.90	0.00	0.02	12.51	0.93	0.00	0.10	9.74	1.39	0.00
IE	3.42	12.44	0.38	0.00	0.55	13.53	0.37	0.00	0.00	12.86	0.25	0.00
EL	8.46	11.41	0.21	0.00	0.02	14.57	0.63	1.13	0.61	14.55	0.82	0.83
ES	4.07	9.81	1.46	0.30	0.22	11.75	1.73	1.01	0.05	12.74	1.98	0.89
FR	2.80	14.74	0.00	1.20	0.08	18.56	0.45	2.58	0.00	18.98	0.67	2.48
IT	3.96	7.75	0.76	0.00	0.62	8.24	0.41	0.57	0.01	9.55	0.81	0.61
CY	X	X	X	X	X	X	X	X	X	X	X	X
LV	8.19	10.30	0.00	0.00	0.04	11.37	0.00	0.52	0.28	9.83	0.00	0.17
LT	7.99	13.89	0.00	0.00	0.00	17.11	0.07	0.09	0.32	15.03	0.00	0.00
LU	3.17	15.46	2.24	5.51	0.53	12.93	1.67	4.77	0.08	15.48	2.47	6.48
HU	4.77	19.43	0.00	0.00	0.24	23.79	0.00	0.13	0.09	21.35	0.00	0.14
MT	X	X	X	X	X	X	X	X	X	X	X	X
NL	1.79	11.06	0.58	2.95	0.36	11.70	1.04	3.75	0.10	12.64	1.53	4.15
AT	4.41	11.55	0.89	1.77	1.13	10.83	2.33	2.93	0.12	11.68	4.63	4.16
PL	4.76	14.27	0.00	0.00	0.08	14.37	0.07	0.14	0.00	14.81	0.14	0.00
PT	3.61	18.89	1.90	0.00	0.53	16.36	1.80	0.12	0.01	16.66	2.30	0.00
RO	6.81	12.56	0.09	0.00	0.12	17.72	0.00	0.24	0.06	17.26	0.00	0.10
SI	9.14	14.71	0.02	0.58	0.04	15.43	0.09	1.26	0.15	14.76	0.52	1.86
SK	4.37	15.27	0.00	0.00	0.41	18.34	0.00	0.56	0.02	18.64	0.00	0.30
FI	9.11	7.17	0.06	0.69	0.67	9.41	0.96	0.70	0.00	7.62	1.16	0.78
SE	4.89	7.49	0.87	1.24	0.03	9.31	1.48	2.21	0.00	8.22	1.95	2.40
UK-ENG/WLS/NIR	2.06	12.35	0.00	0.37	0.85	13.83	0.09	0.59	0.22	13.05	0.15	0.71
UK-SCT	1.92	12.39	0.24	0.06	1.08	14.61	0.06	0.00	0.06	15.56	0.10	0.00
IS	6.53	4.73	0.51	0.17	0.11	7.72	0.48	0.31	0.10	5.98	0.67	0.42
LI	4.25	4.39	11.98	4.40	0.00	11.82	3.16	2.51	0.10	15.03	2.49	3.19
NO	5.06	6.94	0.33	0.76	0.15	6.52	0.75	1.15	0.04	6.41	0.76	1.18
TR	4.76	12.96	0.55	0.55	0.18	17.52	0.40	0.00	0.28	16.59	0.42	0.00

Source: OECD, PISA 2006 database.

A Gender B Index of economic, social and cultural status C Index of immigrant background D Combined

X Country that did not participate to data collection

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EDUCATION, AUDIOVISUAL AND CULTURE EXECUTIVE AGENCY

P9 EURYDICE

Avenue du Bourget 1 (BOU2)
B-1140 Brussels
(http://www.eurydice.org)

Managing editor

Arlette Delhaxhe

Authors

Bernadette Forsthuber (Coordination), Anna Horvath, Akvile Motiejunaite

External experts

Review of the research literature: Gaby Weiner, Centre of Educational Sociology, University of Edinburgh

Support to secondary analysis of PISA-data: Christian Monseur, University of Liège

Layout and graphics

Patrice Brel

Production coordinator

Gisèle De Lel

B. EURYDICE NATIONAL UNITS

BELGIQUE / BELGIË

Unité francophone d'Eurydice
Ministère de la Communauté française
Direction des Relations internationales
Boulevard Léopold II, 44 – Bureau 6A/002
1080 Bruxelles
Contribution of the Unit: Joint responsibility

Eurydice Vlaanderen / Afdeling Internationale Relaties
Ministerie Onderwijs
Hendrik Consciencegebouw 7C10
Koning Albert II – laan 15
1210 Brussel
Contribution of the Unit: Joint responsibility, coordinated by Nathalie De Bleeckere (staff member of the Division for Strategic Policy Support of the Flemish Ministry of Education and Training)

Eurydice-Informationsstelle der Deutschsprachigen Gemeinschaft
Agentur für Europäische Bildungsprogramme VoG
Postfach 72
4700 Eupen

BULGARIA

Eurydice Unit
European Integration and International Organisations Division
European Integration and International Cooperation Department
Ministry of Education and Science
15, Graf Ignatiev Str.
1000 Sofia

ČESKÁ REPUBLIKA

Eurydice Unit
Institute for Information on Education
Senovážné nám. 26
P.O. Box č.1
110 06 Praha 1
Contribution of the Unit: Marcela Máchová;
expert: Irena Smetáčková (Faculty of Education, Charles University in Prague)

DANMARK

Eurydice Unit
Danish Agency for International Education
Fiolstræde 44
1171 København K
Contribution of the Unit: Joint responsibility

DEUTSCHLAND

Eurydice-Informationsstelle des Bundes
EU-Büro des Bundesministeriums für Bildung und Forschung (BMBF) / PT-DLR
Carnotstr. 5
10587 Berlin

Eurydice-Informationsstelle der Länder im Sekretariat der Kultusministerkonferenz
Lennéstrasse 6
53113 Bonn
Contribution of the Unit: Brigitte Lohmar

EESTI

Eurydice Unit
SA Archimedes
Koidula 13A
10125 Tallinn
Contribution of the Unit: expert: Anu Laas (Researcher, Tartu University, Institute of Sociology and Social Policy)

ÉIRE / IRELAND

Eurydice Unit
Department of Education and Science
International Section
Marlborough Street
Dublin 1
Contribution of the Unit: Joint responsibility

ELLÁDA

Eurydice Unit
Ministry of Education, Lifelong Learning and Religious Affairs
Directorate for European Union Affairs
Section C 'Eurydice'
37 Andrea Papandreou Str. (Office 2168)
15180 Maroussi (Attiki)
Contribution of the Unit: Athina Plessa - Papadaki, Evi Zigra, Eirini Giannakoulopoulou, Tina Bakopoulou

ESPAÑA

Unidad Española de Eurydice
Instituto de Formación del Profesorado, Investigación e Innovación Educativa (IFIIE)
Ministerio de Educación
Gobierno de España
c/General Oraa 55
28006 Madrid
Contribution of the Unit: Flora Gil Traver (coordinator), Natalia Gil Novoa, Montserrat Grañeras Pastrana, Manuel González Perrino, Elisa Ruíz Veerman, Maria Vaíllo Rodríguez

FRANCE

Unité française d'Eurydice
Ministère de l'Éducation nationale, de l'Enseignement supérieur et de la Recherche
Direction de l'évaluation, de la prospective et de la performance
Mission aux relations européennes et internationales
61-65, rue Dutot
75732 Paris Cedex 15
Contribution of the Unit: Nadine Dalsheimer;
expert: Pierre Fallourd

ÍSLAND

Eurydice Unit
Ministry of Education, Science and Culture
Office of Evaluation and Analysis
Sölvhólsgötu 4
150 Reykjavik
Contribution of the Unit: Margret Hardardottir

ITALIA

Unità italiana di Eurydice
Agenzia Nazionale per lo Sviluppo dell'Autonomia Scolastica (ex INDIRE)
Via Buonarroti 10
50122 Firenze
Contribution of the Unit: Simona Baggiani; expert: Angela Martini (researcher at the National Institute for the Evaluation of the Education and Training System – INVALSI)

KYPROS

Eurydice Unit
Ministry of Education and Culture
Kimonos and Thoukydidou
1434 Nicosia
Contribution of the Unit: Christiana Haperi;
expert: Dr Despina Charalambidou-Solomi

LATVIJA

Eurydice Unit
Valsts izglītības attīstības aģentūra
State Education Development Agency
Vaļņu street 1
1050 Riga
Contribution of the Unit: expert: Evija Caune (lecturer at Latvia University of Agriculture)

LIECHTENSTEIN

Informationsstelle Eurydice
Schulamt
Austrasse 79
9490 Vaduz
Contribution of the Unit: Eva-Maria Schädler; with the support of Barbara Ospelt-Geiger (Office of Education / Schulamt)

LIETUVA

Eurydice Unit
National Agency for School Evaluation
Didlaukio 82
08303 Vilnius
Contribution of the Unit: expert: Aurelija Novelskaitė; consultants: G.Purvaneckienė, E.Uginčienė, A.Šimaitis, M. Briedis

LUXEMBOURG

Unité d'Eurydice
Ministère de l'Éducation nationale et de la Formation professionnelle (MENFP)
29, Rue Aldringen
2926 Luxembourg
Contribution of the Unit: Astrid Schorn, Mike Engel

MAGYARORSZÁG

Eurydice Unit
Ministry of Education and Culture
Szalay u. 10-14
1055 Budapest
Contribution of the Unit: Sára Kun-Hatony (coordination); experts: Éva Thun, Judit Kádárné Fülöp

MALTA

Eurydice Unit
Directorate for Quality and Standards in Education
Ministry of Education, Culture, Youth and Sport
Great Siege Rd.
Floriana VLT 2000
Contribution of the Unit: Raymond Camilleri (coordination); expert: Josephine Vassallo (Assistant Director, Department of Curriculum Management and eLearning)

NEDERLAND

Eurydice Nederland
Ministerie van Onderwijs, Cultuur en Wetenschap
Directie Internationaal Beleid
IPC 2300 / Kamer 08.051
Postbus 16375
2500 BJ Den Haag
Contribution of the Unit: Joint responsibility

NORGE

Eurydice Unit
Ministry of Education and Research
Department of Policy Analysis, Lifelong Learning and International Affairs
Akersgaten 44
0032 Oslo
Contribution of the Unit: Joint responsibility

ÖSTERREICH

Eurydice-Informationsstelle
Bundesministerium für Unterricht, Kunst und Kultur
Ref. I/6b
Minoritenplatz 5
1014 Wien
Contribution of the Unit: experts: Angelika Paseka, Angela Wroblewski

POLSKA

Eurydice Unit
Foundation for the Development of the Education System
Mokotowska 43
00-551 Warsaw
Contribution of the Unit: Magdalena Fells (coordination); experts: Marta Zahorska-Bugaj, Dominika Walczak (Warsaw University)

PORTUGAL

Unidade Portuguesa da Rede Eurydice (UPRE)
Ministério da Educação
Gabinete de Estatística e Planeamento da Educação (GEPE)
Av. 24 de Julho, 134 – 4.º
1399-54 Lisboa
Contribution of the Unit: Rosa Fernandes; experts: *Associação Portuguesa de Estudos sobre as Mulheres* (APEM) – Portuguese Women's Studies Association, Helena Gil, Luísa Nunes; and Manuela Perdigão

ROMÂNIA

Eurydice Unit
National Agency for Community Programmes in the Field of Education and Vocational Training
Calea Serban Voda, no. 133, 3rd floor
Sector 4
040205 Bucharest
Contribution of the Unit: Veronica - Gabriela Chirea; experts Mihaela Jigau, Irina Horga, Magdalena Balica and Ciprian Fartusnic from the Institute for Educational Sciences

SLOVENIJA

Eurydice Unit
Ministry of Education and Sport
Department for Development of Education (ODE)
Masarykova 16/V
1000 Ljubljana
Contribution of the Unit: expert: Valerija Vendramin (Educational Research Institute)

SLOVENSKÁ REPUBLIKA

Eurydice Unit
Slovak Academic Association for International Cooperation
Svoradova 1
811 03 Bratislava
Contribution of the Unit: Marta Ivanova;
expert: Daniela Drobna

SUOMI / FINLAND

Eurydice Finland
Finnish National Board of Education
P.O. Box 380
00531 Helsinki
Contribution of the Unit: Joint responsibility

SVERIGE

Eurydice Unit
Vocational Training & Adult Education Unit
International Programme Office for Education and Training
Kungsbroplan 3A
Box 22007
104 22 Stockholm
Contribution of the Unit: Joint responsibility

TÜRKIYE

Eurydice Unit Türkiye
MEB, Strateji Geliştirme Başkanlığı (SGB)
Eurydice Türkiye Birimi, Merkez Bina 4. Kat
B-Blok Bakanlıklar
06648 Ankara

UNITED KINGDOM

Eurydice Unit for England, Wales and Northern Ireland
National Foundation for Educational Research (NFER)
The Mere, Upton Park
Slough SL1 2DQ
Contribution of the Unit: Sigrid Boyd, Catherine Higginson

Eurydice Unit Scotland
International Team
Schools Directorate
2B South
Victoria Quay
Edinburgh
EH6 6QQ
Contribution of the Unit: Alan Ogg (national expert)

EACEA; Eurydice

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