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From the Editor

Dear readers of intWOJDE

Welcome to the third issue of the year 2016, Women Online Journal of Distance Education, intWOJDE.

First of all, greetings to all you and best wishes from intWOJDE team.

As known well intWOJDE aims to establish some more new channels of communication for the women in distance education world in general from the entire world to its specific target. So that, some times we are really in difficulties and sensitive for accepting and rejection the submission which are sent to intWOJDE

Among these goals of the intWOJDE there are to share experiences on effective use of distance education in formal and non-formal education, to provide a communication network among distance education experts in order to able to define new strategies for dealing with the issues of distance education for women. In international scope, this scholarly e-journal will publish refereed articles, researches, case studies, book/conference reviews focusing on the women issues and challenges of providing research and information services to women learners participated or enrolled at any of level of distance education. It will particularly strive to meet the continuing education needs of practitioners by providing a forum for the discussion of extended learning policies and practices, and trends in information technologies as they impact the delivery of any kind of the student support services for distance learners and institutions. And also, intWOJDE reflects that the disciplines of Women' position, benefits, advantages and disadvantages in Distance Education/Learning, Open Learning areas which are interdependent with one another, as education and technology increasingly affects our system, students, colleagues, distance educators, administrators, researchers and our own professional practice and articles ranging from theoretical to practical studies, across a wide range of interests and topics.

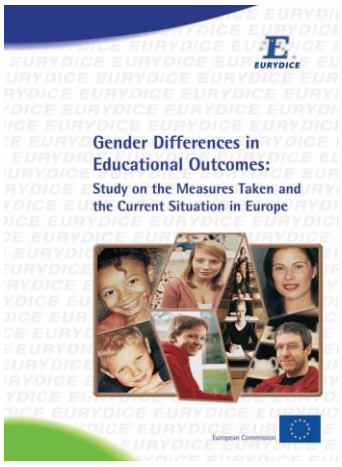
Than we are giving a place to women and DE some related sections such as "Notes for Editor", "Re-published Material/s" section which is aiming to inform you by presenting earlier printed articles, reports, project reports key speeches in conferences or other documents. Other one is "Success Stories" Section inform you success stories of the women who are DE learner or graduated from DE institutions and related subjects women in DE world. Another section is "Book review/s", which aims to inform you from literature and promote women and DE related books from the DE field. We started for a few issue before publishing "Interviews" section which we are planning to give a place some women expert's thoughts in this section. These experts are mostly selected from deal with any sectors who are successful in their professional carriers such as academics, administrators, lowers, artists, engineer etc.

In this issue, we decided to prepare and deliver reports to you as special on reports issue which are re-published so earlier and soonest reports for the reason to be more beneficial to you by informing especially for young generations what are reported around the world which deals with our authors, target readers and the others who are interested in with intWOJDE. We will try to deliver and provide to you, in some periods. We expect your satisfy from old to new evaluations women in distance education.

In this special reports Issue 6 reports were published for intWOJDE readers. This issue's first republished report is Fact Sheet on Afghanistan by mentioning Teaching and learning: Achieving quality for all. This report published by EFA GLOBAL Monitoring Report. It is mention that despite improvements over the decade, Afghanistan has the highest level of gender disparity in primary education in the world with only 71 girls in primary school for every 100 boys. It is likely to remain very far from the target of gender parity in primary education by 2015. No girls were in secondary school in 1999 in the country. By 2011, the female gross enrolment ratio rose to 34%, which meant there were only 55 girls in secondary school for every 100 boys.

Second report is from International Training Centre of the ILO, Turin Independent Evaluation of Training and Learning Activities on the Thematic Area of "Promotion of Gender Equality and Diversity", submitted by Dana Peebles. To strengthen its approach to evaluation and the quality of its programming, the International Training Centre of the ILO (the Centre) has committed to conducting a series of thematic evaluations on an annual basis. This evaluation of the Centre's promotion of gender equality represents the first of these thematic evaluations. Data was collected through a document review (course evaluations and relevant policy and strategic documents); conducting key informant interviews with Centre Activity Managers, Senior Management, and partners; and administering a survey with former participants. The evaluation also conducted in-depth key informant interviews with relevant staff from Italy's Institute of Nuclear Physics to support development of a case study to document a technical assistance and support process used in the Centre's work with the Institute as an alternative form of learning and capacity building.

The survey was sent to 283 former participants from nine courses, selected from a combination of six gender-focused courses implemented by the Center's gender programme (ILSGEN) and four courses that integrated gender from other technical programme areas. The survey had a 31% response rate. A total of 113 people participated in the evaluation process.



The third report is titled as "Gender Differences in Educational Outcomes: Study on the Measures Taken and the Current Situation in Europe" which is prepared and presented this document is published by the Education, Audiovisual and Culture Executive Agency (EACEA P9 Eurydice). Available in English (Gender Differences in Educational Outcomes: Study on the Measures Taken and the Current Situation in Europe), French (Différences entre les genres en matière de réussite scolaire: étude sur les mesures prises et la situation actuelle en Europe) and German (Geschlechterunterschiede bei Bildungsresultaten: derzeitige Situation und aktuelle Maßnahmen in Europa). ISBN 978-92-9201-080-5, DOI 10.2797/3598, Text completed in December 2009.

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 math, 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. 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

The fourth report is from Texas Woman's University Distance Education, Snapshot Report Fall 2015. This report gives very useful data about Texas Woman's University Distance Education facts for the interested in readers of intWOJDE.

The fifth report prepared by United Nations Division for the Advancement of Women (DAW), part of UN Women in cooperation with United Nations Educational, Scientific and Cultural Organization (UNESCO), Paris, France, between 28 September-1 October 2010, on "Gender, science and technology Report of the expert group meeting".

This report is the outcome of the meeting. It will provide inputs for the reports of the Secretary-General to the CSW. The report will be widely disseminated at the fifty-fifth session of CSW, including through a presentation during a panel discussion. The documentation for the meeting consisted of: a background paper prepared by a consultant; a background paper prepared by UNESCO; Twelve papers prepared by experts and Four papers prepared by observers. This report and all documentation relating to the meeting are available from http://www.un.org/womenwatch/daw/egm/gst_2010/index.html

The last but not least sixth report on "Open and Distance Education for the Marginalized (by UNESCO Bangkok, ICT in Education)". Report based on to various degrees, marginalization and vulnerability exist almost everywhere in the world. In some contexts these groups are in smaller numbers, while in others, the concept of being "marginalized" becomes more controversial, as they may constitute most of the population, depending on the context.

The consequent question arises as to who and where these marginalized groups are, why they are marginalized, and how their challenges can be addressed in an inclusive and efficient way.

Evaluating some of the national policies and data available on the vulnerable and marginalized, five categories of marginalization emerge: gender-related (girls), culture-related (castes, tribes, religious groups), location-related (refugees, conflict-affected areas, child soldiers, nomads), poverty-related (working children, single mothers), as well as and special groups (disabled children, children living with HIV and AIDS, orphans) (UNESCO, 2010, p. 5). Retrieved on 1 July 2016 and available from http://www.unescobkk.org/education/ict/online-resources/databases/ict-in-education-database/item/article/open-and-distance-education-for-the-marginalized-ict-in-education-unesco-bangkok/

Dear readers, int.WOJDE wishes to add some new sections in int.WOJDE' body as "Notes for Editor" or a "Conference Review", etc. in its future issues as soon as possible. So we are waiting materials from you for fed these sections too in due course.

You can reach us online either directly at http://www.wojde.org to receive further information and to send your recommendations and remarks, or to submit articles for consideration, please contact intWOJDE Secretariat at the below address or e-mail us at intwojde@gmail.com

Hope to stay in touch and wishing to meet in our next Issue, 1st of October 2016

Cordially,

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EFA Global Monitoring Report 2 0 1 3/4

United Nations Educational, Scientific and Cultural Organization

EFA GMR EDUCATION FOR ALL GLOBAL MONITORING REPORT

Teaching and learning: Achieving quality for all

Afghanistan: Fact Sheet

Most EFA goals are likely to be missed by 2015

The pace of progress towards universal primary education, lower secondary education and youth literacy is too slow, particularly for the disadvantaged. For this Report, an attempt was made to identify which countries lacking data are likely to have more than 1 million children out of school, using estimates of the primary net attendance rate from household surveys carried out between 2008 and 2011. These calculations add six countries to the eight known to have more than 1 million children out of school. Afghanistan is among these.

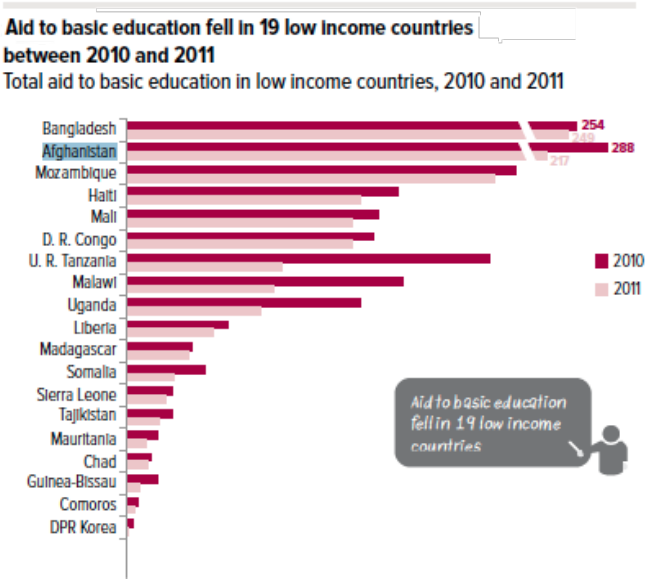
Despite improvements over the decade, Afghanistan has the highest level of gender disparity in primary education in the world with only 71 girls in primary school for every 100 boys. It is likely to remain very far from the target of gender parity in primary education by 2015.

No girls were in secondary school in 1999 in the country. By 2011, the female gross enrolment ratio rose to 34%, which meant there were only 55 girls in secondary school for every 100 boys.

Trends in financing Education for All

New EFA goals after 2015 should set a target for all countries to allocate at least 6% of GNP to education and at least 20% of total government expenditure on education. In Afghanistan, education accounts for 3.5% of the GNP and 16.7% of the total government expenditure.

Afghanistan was expected to increase its spending on education by 15% in real terms between 2011 and 2012, although the share of the education budget as a proportion of government spending was likely to remain below 20%.



Low income countries, which only receive around one-third of aid to basic education, witnessed a larger decrease in aid to basic education than middle income countries. In Afghanistan, total aid to basic education in the country fell from $US288 million in 2010 to $US217 million in 2011.

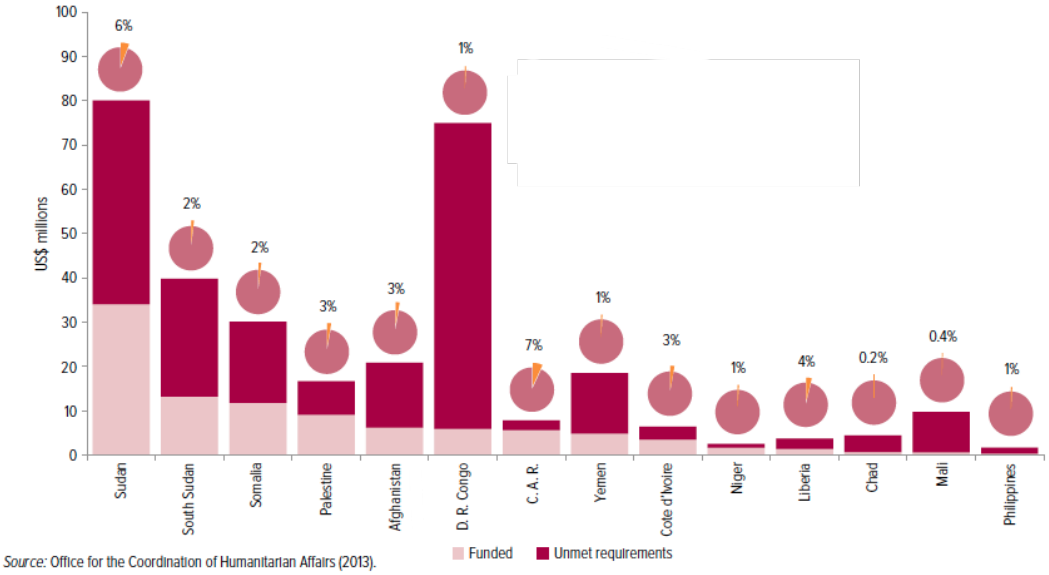
While annual fluctuations in aid may not be uncommon, such changes make it difficult for countries to plan. Given that a large proportion of education spending is on teacher salaries, sudden reductions in aid can mean that teachers are not paid on time, or that teachers leaving the profession are not replaced, seriously harming the quality of education. Part of this decline is due to the United States decreasing its spending to the country.

Humanitarian aid appeals neglect education needs

With half the world's out-of-school children residing in conflict-affected countries such as Afghanistan, education in these countries should be a priority for donors. Recognizing this, the UN Secretary-General's Global Education First Initiative (GEFI) set a target of 4% for education's share of short-term humanitarian aid. While this sounds modest, it is unfortunately far beyond the actual share in 2012: 1.4%, down from 2.2% in 2009. Education is the sector receiving the smallest proportion of requests for humanitarian aid, and just 26% of the amounts requested are actually covered.

The funds requested for the education sector in Afghanistan's consolidated appeal were the lowest for any sector and, despite this, less than quarter of the request was met. As a share of total funding, education received just 3% of the Afghanistan humanitarian appeal.

Conflict-affected countries receive only a tiny share of their requests for humanitarian education funding
Consolidated and flash appeal requests and funding for education, selected conflict-affected countries, 2012

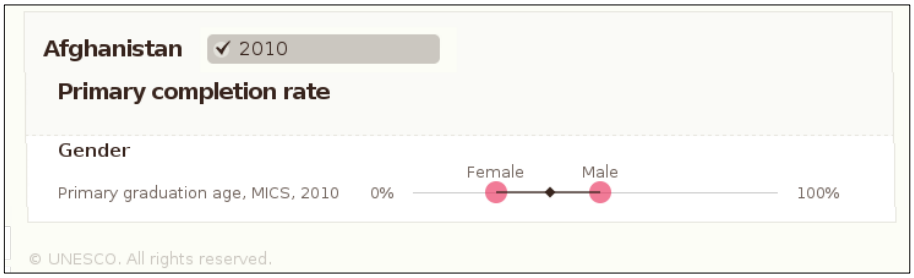


Source: Office for the Coordination of Humanitarian Affairs (2013).

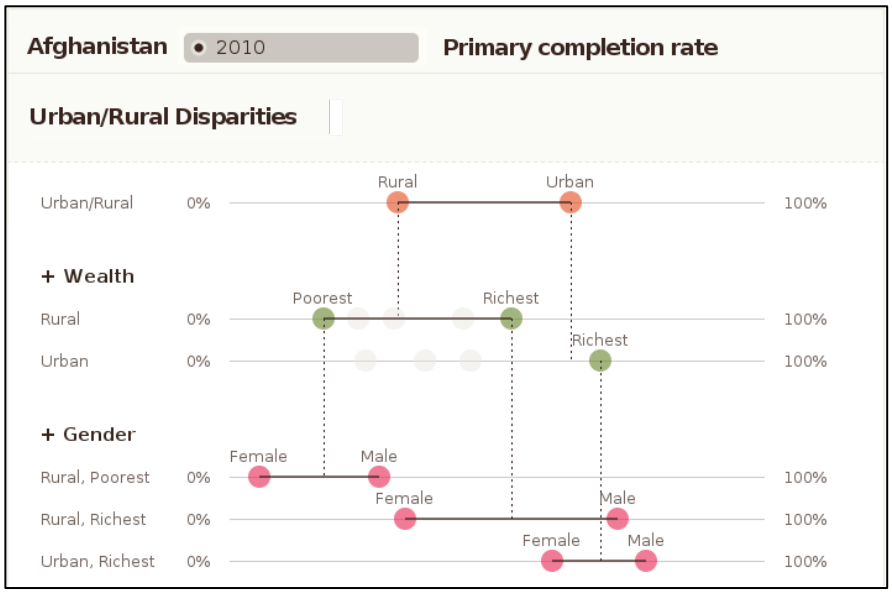
Wide inequalities in education

The World Inequality Database on Education (WIDE) highlights the powerful influence of circumstances, such as wealth, gender, ethnicity and location, over which people have little control but which play an important role in shaping their opportunities for education. It draws attention to unacceptable levels of inequality in access and learning across countries and within countries, with the aim of helping to inform policy design and public debate. www.education-inequalities.org

In Afghanistan in 2010, less than half (23%) the number of girls were completing primary education than the number of boys (51%).



The interaction between geography, gender and poverty is a potent source of exclusion. While almost 80% of the richest boys in urban areas were completing primary school in 2011, the same was true for only 4% of the poorest girls living in rural areas.



A four-part strategy for providing the best teachers

1. Attract the best teachers

The quality of an education system is only as good as the quality of its teachers. It is not enough just to want to teach. People should enter the profession having received a good education themselves. They need to have completed at least secondary schooling of appropriate quality and relevance, so that they have a sound knowledge of the subjects they will be teaching and the ability to acquire the skills needed to teach.

Policy-makers need to focus their attention also on achieving the right mix of teachers, including recruiting teachers from under-represented groups. In Afghanistan, women teachers are urgently needed, but the lack of girls' education until recently has meant very few women qualified to become teachers. In 2008, less than 30% of those in initial teacher education were female, even though the numbers had been increasing thanks to programmes

enabling women to enter teaching with lower qualifications. In 2011, less than a third of teachers in primary education in the country were female.

Afghanistan aims to increase the number of female teachers by 50% by 2014 under an interim education plan that includes monetary and housing incentives for female teachers, and special teacher training programmes for women in remote areas and women who do not meet current qualification requirements.

Another response to the teacher deployment problem is to recruit teachers from within their own communities. In Afghanistan, female teachers are vital for girls to be able to enroll in school, but women face cultural barriers in seeking work in areas where they are not chaperoned by family members. As a result there are twice as many female teachers as male teachers in the capital, Kabul, while in Uruzgan province, most of which is remote and unsafe, there are no female teachers who have the minimum qualification. Local recruitment of female teachers is one solution to such extreme inequality. Local recruitment has its benefits, such as teachers' greater acceptance of a rural posting and reduced attrition, but some of the most disadvantaged communities lack competent applicants where access to primary schooling is low, as is the case in Afghanistan.

Working with secondary school girls to raise their interest in teaching and offering financial assistance is another strategy that can potentially increase the number of female teachers and has been seen to work in other contexts.

2. Improve teacher education so all children can learn

Initial teacher education should make up for weak subject knowledge. Prospective teachers should ideally enter teacher education programmes knowing enough about the subjects they are going to teach. In some income countries, however, teachers often enter the profession lacking core subject knowledge because their own education has been poor. In such circumstances, initial teacher education programmes need to ensure that all trainees acquire a good understanding of the subjects they will be teaching.

Teachers need to be trained to teach, particularly in early grades. Teacher education programmes need to support teachers in being able to teach early reading skills in more than one language and to use local language materials effectively.

Preparing teachers to support learners from diverse backgrounds is essential. As a result of inadequate training, many newly qualified teachers are not confident that they have the skills necessary to support children with more challenging learning needs.

Pre-service education is vital to provide teachers with the skills to teach multiple grades, ages and abilities in one classroom.

Initial teacher education needs to provide classroom experience. Teachers' skills need to be improved through ongoing education. Regular supervision and ongoing training have the potential to address knowledge gaps and upgrade and reinforce acquired skills.

Mentoring new teachers once they are in the classroom is vital, particularly in poorer countries where teachers have limited prior practical experience.

Trainers need training too. The key role that teacher educators play in shaping teachers' skills is often the most neglected aspect of teacher preparation systems. Curriculum reform requires teacher educators to be adequately prepared to orient teachers in curriculum changes.

Distance education can boost countries' capacity to train teachers. Distance teacher education programmes have the potential to reach more future teachers at lower cost than programmes in teacher education institutions. Costs

per student graduating from distance programmes have been estimated at between one-third and two-thirds of conventional programmes.

3. Get teachers where they are most needed

Inequality in deployment leads not only to fewer teachers in deprived areas but also to disadvantaged students being taught by teachers with weaker subject knowledge, exacerbating inequality in learning outcomes. Unequal distribution of teachers is one reason some children leave school before learning the basics. Financial incentives and good housing can promote deployment to remote or rural areas.

Local recruitment of teachers to serve in their own communities can also address teacher shortages in remote or disadvantaged areas and can result in lower teacher attrition. However, some of the most disadvantaged communities lack competent applicants where access to primary schooling is low. Women are also less likely than men to work in disadvantaged areas.

4. Provide incentives to retain the best teachers

Governments should ensure that teachers earn at least enough to lift their families above the poverty line and make their pay competitive with comparable professions.

Teachers' salaries – and the rates at which they increase – are conventionally determined by formal qualifications, the amount of training and years of experience. But pay structures based on these criteria do not necessarily lead to better learning outcomes. Using multiple evaluators is one way of producing fair and successful teacher appraisals, but requires considerable time and resources on the part of the evaluators and those being evaluated.

Low pay for contract teachers is not a long term solution to poor quality education. One reason why there is no clear difference at all in performance between contract teachers and regular teachers is some settings is that ultimately they face similar challenges.

Relating teachers' pay to the performance of their students is an alternative approach that has intuitive appeal. But it is difficult to find reliable ways to evaluate which teachers are the best and add the most value. Performance-related pay can also have unintended side effects on teaching and learning and may reward only those schools and teachers whose students are already performing well, rather than those that have helped children improve the most, to the detriment of disadvantaged learners.

However, a more appropriate way of motivating teachers to improve education quality is to offer an attractive career path, with promotion criteria that take into account initiatives by teachers in addressing diversity and supporting weak students. Many teachers have limited prospects of promotion, however. Those teaching in remote areas may be especially affected.

Strengthening teacher governance

If days are lost because teachers are absent or devote more attention to private tuition than classroom teaching, the learning of the poorest children can be harmed. Absenteeism can also reinforce gender disparities.

Understanding the reasons behind these problems is crucial for the design of effective strategies to solve them. Strong school leadership is required to ensure that teachers show up on time, work a full week and provide equal support to all. In some countries, high levels of absenteeism are due to many teachers missing more school days than can be explained by non-teaching duties or illness, rather than extreme absenteeism by a minority of teachers who might be easily identified.

Even though teacher absenteeism is widespread in some countries, it is not inevitable, which suggests it is a response to working conditions.

Combining monitoring with incentives could be more beneficial than penalties for tackling absenteeism. Other interventions aimed at enhancing teacher accountability are often expected to reduce teacher absenteeism, but do not necessarily do so.

Governments should work more closely with teacher unions and teachers to formulate policies and adopt codes of conduct to tackle unprofessional behaviour such as persistent absenteeism and gender-based violence. Codes of practice should be consistent with legal frameworks for child rights and protection and a range of penalties, such as suspension and interdiction, clearly stipulated.

Private schools that charge low fees are seen by some as one way of expanding access to better quality education for disadvantaged children in areas where government schools are failing. Such schools are also seen as a less expensive way of achieving quality, because they can recruit teachers at lower cost than government schools. Advocates of low fee private schools argue that students in these schools achieve better learning outcomes than students in government schools, but such differences arise partly because teachers in government schools often face more difficult conditions, teaching larger classes and children with a wider diversity of learning needs.

Gender-based violence in schools is a major barrier to quality and equality in education. Programmes and policies addressing gender discrimination and gender-based violence need to protect and empower girls, challenge entrenched practices, bring perpetrators to light and take action against them. Legal and policy frameworks that provide general protection for children need to be strengthened and publicized, and teachers need to be made aware of their own roles and responsibilities. Advocacy and lobbying constitute an important first step in seeing that policies tackling gender-based violence are in place and enforced.

Curriculum and assessment strategies that improve learning

Policy-makers should ensure the curriculum focuses on securing strong foundation skills for all, is delivered at an appropriate pace and in a language children understand.

Governments should ensure that adequate and relevant resources are in place to support learning from the earliest years and build a culture of reading. The quality of pre-school education makes a crucial difference to children's learning in early primary grades. Support outside school hours can help.

Curricula that do not acknowledge and address issues of inclusion can alienate disadvantaged groups within the classroom, and so limit their chances to learn effectively. In some countries, curricula reinforce traditional gender stereotypes. Where gender-responsive curricula have been developed, test scores measuring attitudes on several gender-related issues improved.

Getting out-of-school children back into school and learning is vital. Governments and donor agencies should support accelerated learning programmes to achieve this goal. Teachers are generally recruited from surrounding communities, ensuring a common cultural and linguistic background and enhancing accountability to community members.

Some countries have made great strides in using national assessments to identify children who need extra attention. Classroom-based learning assessments help teachers identify students who are struggling to learn, diagnose their learning difficulties and choose strategies to support them. Students can also make considerable gains if they are offered more opportunities to monitor their own learning.

Targeted additional support via trained teaching assistants or community volunteers is another key way of improving learning for students at risk of falling behind.

International Training Centre of the ILO, Turin
Independent Evaluation of Training and Learning Activities
on the Thematic Area of "Promotion of Gender Equality and Diversity"

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10 Aug, 2015

Executive Summary

Evaluation Background and Methodology

To strengthen its approach to evaluation and the quality of its programming, the International Training Centre of the ILO (the Centre) has committed to conducting a series of thematic evaluations on an annual basis. This evaluation of the Centre's promotion of gender equality represents the first of these thematic evaluations. Data was collected through a document review (course evaluations and relevant policy and strategic documents); conducting key informant interviews with Centre Activity Managers, Senior Management, and partners; and administering a survey with former participants. The evaluation also conducted in-depth key informant interviews with relevant staff from Italy's Institute of Nuclear Physics to support development of a case study to document a technical assistance and support process used in the Centre's work with the Institute as an alternative form of learning and capacity building.

The survey was sent to 283 former participants from nine courses, selected from a combination of six gender-focused courses implemented by the Centre's gender programme (ILSGEN) and four courses that integrated gender from other technical programme areas. The survey had a 31% response rate. A total of 113 people participated in the evaluation process.

Relevance

The courses and other learning activities are relevant. They represent a blend of the Centre's more traditional approaches to work with ILO constituents combined with treatment of cutting-edge themes that attract a wider audience or which help ILO constituents apply innovative ways to integrate gender into their work. The way they have been set up address the commitments made in the *ILO Action Plan for Gender Equality 2010-2015, the Centre's Gender Result-Based Action Plan 2012-15* and the corresponding four programmes quite solidly. However, while it is apparent that the Centre is addressing gender within all its technical programme areas, it was not clear with the data available how evenly or to what extent this has been done across all technical programme areas.

The Centre's learning activities related to gender equality are reaching all ILO's constituents as well as a growing group of CSOs, academics and other UN agencies. The Centre has also been successful in achieving high rates of female participation in its gender-focused or integrated courses, but not in increasing these participation rates in all of its other learning activities. It has a high rate (relatively speaking) of male participation in most but not all gender-related courses. There may thus be a need for additional outreach to ensure that men are adequately represented in some specific courses. It also appears that the Centre is not reaching people with disabilities to the degree in which they are represented in the population or labour force.

Results and Effectiveness

The overall results arising from the Centre's approach to gender within its learning activities have been quite positive and significant in multiple areas for all ILO constituents, with 62.1% of evaluation survey respondents indicating concrete results. Many of these they believe to be sustainable and provided concrete evidence that this was the case. It was also possible to document that at least half of the evaluation learning activity sample had generated results that have already been replicated or scaled up despite these courses or learning activities only having been completed within the past year and a half. This also represents a significant outcome.

The extent of immediate results and of upscaled or replicated results also represents quite a high rate of return for learning activities - even more so for activities related to the promotion of gender equality which typically require a long time to effect visible and significant change. The most cost efficient learning modality combines on-line and face-to-face courses run within the context of a technical cooperation project or with a longer-term partner, particularly where there are project or partner personnel in the countries where the participants are concentrated.

Validity of Activity Design

Learning activities are generally well designed from a logic perspective but sometimes try to include too much material in a short time period. With this exception, course learning objectives are realistic. This is reflected consistently in the high level of post-course results as well as in the end-of-course evaluations.

End-of-course evaluations allow for a consistent comparison of course and learning quality across the board, but not for the tracking of specific course results. They can only accurately track course results to a limited degree as questions about future results can only be speculative in nature. Some final reports for courses are also incomplete and do not include course evaluation results or an analysis of the strengths and weaknesses of the course. Follow-up evaluations are also not conducted systematically across the board (it was not clear if there are the resources to do this). Activity Managers find the gender question in the course evaluation to be unclear. As a result, it generates rather mixed results that Activity Managers do not think necessarily reflect the actual treatment of gender within course material.

Follow-up evaluations are generally well designed (although a bit generic in nature) but are not conducted systematically for all courses. This limits the degree to which the Centre can document and track longer-term results. This also limits the degree to which Activity Managers are aware of or able to track post-course results and use these to strengthen future programming or provide additional technical support to past participants.

Efficiency of Use of Resources

The level of both immediate results and extent of upscaled or replicated results represents quite a high rate of return for learning activities and even more so for activities related to the promotion of gender equality. Overall, the use of blended on-line and face-to-face courses run within the context of a technical cooperation project or with a longer-term partner where there are project or partner personnel in the countries where the participants are concentrated was the most efficient use of learning activity resources. Where the thematic area permits, for targeted courses, holding them in the region or country where the participants are concentrated made the learning activities both more accessible and less expensive and therefore was a more efficient approach.

Management Arrangements

The Centre generally does a good job of informing participants of logistical arrangements and course content prior to course implementation and has effective management arrangements in place. However, it does not make systematic use of social media as a tool to enhance learning. Where it does, it is seen to be effective by participants and appears to add to the achievement of learning results in the blended course options.

While the Centre has integrated gender into all its technical areas, it is not clear how evenly this has been done across the board, with some technical areas appearing to have more gender-integrated courses than others. There is also no longer any formal system in place to ensure that this gender integration takes place and the Centre could benefit from the reinstatement of its peer review process or other kind of cross programme review system which could be used as a tool to ensure a more systematic integration of gender into other technical programme areas.

Conclusion

To sum up, the Centre's approach to the gender equality thematic area is serving ILO constituents well, has done a good job of attracting the participation and experience of other sectors and is generating a high level of both immediate and longer-term results. Outstanding concerns are that Activity Managers do not yet have access to a systematic means for tracking course or learning activity results and that there still remains a significant minority of course participants who do not feel they can apply the skills and knowledge they learned related to gender effectively. Overall, however, the Centre's reputation as a cutting-edge training institution with regard to gender is merited and its overall approach to this thematic area is highly relevant and well implemented.

A summary of the key lessons learned from the evaluation findings are as follows:

1. To maintain relevance within the gender equality area while still being cost effective, the Centre needs to continue to reach out to groups and sectors beyond the traditional ILO tripartite constituents.

2. Strategic partnerships such as those with UN Women not only expand the reach of the Centre's learning activities but also often serve to reinforce course results and are generally a cost effective way to deliver training.

3. The success of the technical support approach used with the GENIS Lab project showcased the effectiveness of a longer-term approach where much of the learning takes place outside of the classroom in an applied learning setting. It also demonstrated the strength of the ILO Participatory Gender Audit methodology.

4. As currently structured, end-of-course and follow-up evaluations are insufficient tools to track the significant and very concrete results of the Centre's learning activities related to gender equality.

5. To coordinate the integration of gender equality across all technical programmes in a systematic way requires a formal mechanism to do so as opposed to relying primarily on the interest of individual Activity Managers and goodwill and availability of inputs from ILSGEN staff.

6. Although blended courses are more expensive since they are longer in length and require additional resources to develop and deliver, they appear to be more cost effective as they attract more committed learners, provide more opportunities to interact with participants and increase the likelihood of the blended gender-focussed or integrated courses offered having significant results following course completion.

Recommendations

Based on the evaluation findings, the evaluation recommends the following actions to address gaps identified in each evaluation category.

A. Activity Relevance and Outreach

1. The Centre should set and track concrete targets for male participation in gender-focused courses or learning activities.
2. The Centre should add a category in its application forms and course evaluations to allow participants to self-identify as having a disability, being from an ethnic or other minority, and by age. This would allow the Centre to track if the degree of their participation in the Centre's learning activities is proportionate to their representation in the population or among constituents so that if it is not, additional outreach to these groups can be added.
3. Future progress reports should include an analysis of female participation rates by technical programme area and not just as a Centre average. This will help the Centre determine if it is actually meeting its female participation targets in each area.

B. Validity of Course Design

4. The Centre could consider revising its end-of-course evaluations to include a question or questions on specific results tailored for each course or learning activity.
5. The question on gender needs to be revised for greater clarity. One possibility is to divide the question into two, e.g. "How well did the course address the specific needs of both women and men within the course's sector or theme?" and "To what extent did this course/learning activity give you any tools, skills or knowledge to address gender equality in the sector in which you work?" A variation on this latter question should also be included in the follow-up evaluation format.
6. Final reports on courses should always include the end-of-course evaluation results and a response and analysis of these results.
7. To the extent that the Centre budget and staff time permits, it should increase the number of follow-up evaluations conducted so that this is done more systematically for each technical programme area.

C. Effectiveness

8. There is a need for Activity Managers to review each gender-focused or integrated course to determine how to increase the number/percentage of participants who feel they have sufficient skills, confidence and knowledge following course completion to be able to apply these to affect positive change related to gender equality within the organization or sector in which they work. The actions needed may be different for each course that is the reason there is a need for a course-by-course review.
9. The Centre should find ways to showcase the success and results of their gender-focused and integrated courses and learning activities in public fora and among its constituents to both provide recognition of the high quality work its staff are doing and as a means to promote increased participation in the Centre's related course offerings in the future.

D. Activity Impact Orientation

10. The Centre should consider if it is possible to make greater use of social media as a means for Activity Managers to track the longer-term gender impact of its courses more systematically. Social media could also be used to help facilitate networks among course participants since this will also reinforce course results. This will also depend upon the resources available, but it may be possible to establish a partnership with the private sector as a potential donor to provide these services for some courses.

E. Efficiency of Use of Resources

11. The Centre should consider reinstating the course/learning activity peer review system to both enhance a systematic review of gender integration across all technical areas as well as foster increased communication across technical program areas regarding on what projects and courses each area is working. An alternative is to review the Gender Focal Point Network to enable it to take on this gender integration role. That, however, would require that additional resources be allocated to support the increased coordination of this network by ILSGEN.

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List of Acronyms

CSOs	Civil Society Organizations
CUG	Comitato Unico di Garanzia (Equality Opportunity Committee) -INFN
ILO	International Labour Organization
ILSGEN	International Labour Standards and Gender Equality
INFN	Institute of Nuclear Physics
ITC-ILO	International Training Centre – International Labour Organization
MESPT	Micro Enterprises Support Programme Trust
MOU	Memorandum of Understanding
TAP	Tailored Action Plan
TORs	Terms of Reference
UN SWAP	UN System Wide Action Plan on Gender Equality

Independent Evaluation of Training and Learning Activities on the Thematic Area of "Promotion of Gender Equality and Diversity"

Section 1: Introduction

The International Training Centre of the ILO (the Centre) contracted this evaluation in partial response to the statement in its ***Results-based Strategic Plan for 2012-15*** on the importance of evaluation. A concern was also raised in the *ILO Field operations and structure, and technical cooperation review* (2013), about the relevance of the Centre's services to ILO constituents. To address these issues, the Centre committed to implement independent evaluations of its thematic technical training areas/programmes on a cyclical basis. This evaluation represents the first of these thematic evaluations.

The evaluation was undertaken under the auspices of the Office of the Director of Training since its scope encompassed learning activities that integrated or focused on gender equality offered by more than one technical programme unit. The Evaluation Manager from the Centre for this thematic evaluation was Alessandro Patrone and the independent evaluation consultant, Dana Peebles from Kartini International.

1.1 Evaluation Objectives and Scope

The evaluation Terms of Reference (TORs) state the objective of the evaluation is to provide the Centre with evidence of the relevance and effectiveness of its training and learning activities related to the theme of promotion of gender equality and elimination of discrimination. The idea is that the Centre will be able to use this evidence to inform decisions about further development and evolution of its training and learning activities portfolio on the theme of gender equality and the elimination of discrimination in the 2016-17 biennium. The primary audiences of the evaluation are Centre staff and its partner organizations.

The evaluation covered selected training and advisory services that aimed to promote gender equality. It did not cover the diversity area in any depth beyond looking at which groups of participants took part. The gender equality and non-discrimination thematic area included learning activities that promoted ILO's fundamental Conventions and other instruments on equality and non-discrimination, and/or provided related support for ILO tripartite constituents and other beneficiaries. The evaluation also explored the training and learning activity partnerships in which the Centre engaged on these themes. Specifically it examined a combination of the Centre's lead technical programme on gender (ILSGEN)[1] and the integration of gender equality and discrimination issues into a small selection of other training courses from other technical programmes the Centre offered from May 2013 to June 2014.

The Centre selected a representative sample of ten learning activities from this time period. This time frame ensured there was at least 12 months between the learning activity delivery/completion and this follow-up evaluation. In keeping with the Centre's gender mainstreaming mandate, the sample also included four relevant activities organized by a

[1] International Labour Standards, Rights and Work and Gender Equality

technical programme other than ILSGEN and were representative of ILO's tripartite constituent groups. The Centre selected a sample of activities from a list of 37 A-coded activities (those that involved groups) and 16 E-coded activities (other forms of learning support) the Centre had organized during the evaluation period. This included six from all activities linked to the Gender Equality and Diversity thematic area in the Management of Activities and Participants (MAP) database and four activities that had been pre-identified using the Centre's gender marker as a filter criteria[2]. Nine of the ten activities selected were A-coded and one, the GENIS Lab project, was E-coded. The latter provided an example of learning through technical support as opposed to through more traditional course-based work. The A-coded activities also included the 2013 Gender Academy, a conference with multiple streams of gender-focused activities and panel discussions. The rationale behind this diverse selection was to ensure the evaluation of different types of learning activities that either focused on or integrated gender equality.

1.2 Methodology

The evaluation followed UN Evaluation Norms and Standards throughout the process.

It used three primary methods of data collection:

1. *Key informant interviews* with Centre staff responsible for the learning activities assessed as part of the evaluation sample in Turin (refer to Annex 1 for a list of those met or interviewed).
2. *Key informant interviews* with a selected group of partners or stakeholders involved with the learning activities included in the evaluation samples (see Annex 1).
3. *In-depth key informant interviews with five staff members involved with the Genis Lab project with Italy's* National Institute of Nuclear Physics (INFN) to serve as the basis for a case study on this project/learning activity (See Annex 1).
4. *Document review* covering learning activity descriptions, activity evaluations and reports, follow-up evaluation reports (where applicable) based on the evaluation matrix developed for this evaluation (refer to Annex 3 for a copy of the evaluation matrix).
5. *An on-line survey of former participants* from a sample of nine A-coded activities.

This mix of data collection methods and sources allowed for the triangulation of the findings for each evaluation question. This data was collected over the following period of time:

- Key informant interviews – Mission to ILO –ITC, Turin, 24-26 June 2015.
- Key informant interview – Mission to INFN, Frascati, Italy, 29-30 June 2015.
- Partner and Stakeholder Interviews (Skype) , 2 – 30 July 2015.
- Participants Survey (Data Collection period), 8 -19 July 2015.
- Data analysis and report writing (1st draft) 20 – 30 July 2015.
- Report revisions, 6 – 10 August, 2015.

The evaluation matrix was based on ten core evaluative questions and seven information-based questions that examined:

- Relevance and outreach of the learning activities

[2] A-coded activities outside of ILSGEN offerings had to have been allocated a 2 or 3 Gender Marker rating to be considered for inclusion in the evaluation since these ratings demonstrate a significant degree of gender content integration into the learning activity.

- Validity of the activity design
- Effectiveness of the activity and related arrangements and partnerships
- Efficiency of the use of related resources
- Effectiveness of management arrangements
- Impact orientation of the activity

Ratings for each area above are included in the evaluation matrix found in Annex 2.

As requested by the Centre, the report's structure is based on the evaluation questions outlined in the TORs as opposed to using a more summative approach. This is to allow for ready comparison with other Centre and ILO evaluations. For the INFN institutional case study, the evaluator used the Gender at Work institutional gender analysis framework as well as the evaluation questions and matrix to guide the related analysis. The ***Gender at Work*** framework examines changes within an institution from four different perspectives as outlined below:

Awareness: • Of gender issues affecting staff or programming and their underlying causes	**Access to resources/opportunities:** • Identifies any differences in access to resources or opportunities between specific groups of women and men within an institution • Identifies any changes in these
Cultural norms: • Informal institutional practices and core beliefs of staff (particularly decision-makers) that contribute to gender inequality in either staffing or program results • Any changes in these practices or beliefs	**Policy and institutional change:** • Formal institutional policies and practices that may contribute to gender inequality in either staffing or program results • Any changes in these

1.3 Learning Activities Sample

The learning activities selected by the Centre for the evaluation sample included the following:

Table 1: Summary of Learning Activities Sampled

Title	# of Participants	Dates Offered	Region/Country Targeted	Language
2013 Gender Academy	159	11/11/2013 – 22/11 -2013 Turin	Global	English French Spanish
ILO participatory gender audit facilitators' certification	13	Blended (27/5/2013 – 28/06/2013 at distance) - 08/07/2013 – 12/07/2013 Turin	Global	English
Gender equality for development effectiveness	25	26/05/2014 – 30/05/2014 Turin	Global	English
Gender and Organizational Change	34	31/03/2014 – 04/04/2014 Turin	Global	English
Atelier 1: Planification et budgétisation selon le genre dans le cycle budgétaire du Burundi	33	Field – 12/08/2013 – 16/08/2013 Burundi	Burundi	French

Title	# of Participants	Dates Offered	Region/Country Targeted	Language
Vínculos entre migración laboral, género y desarrollo en América Latina	34	19/08/2013 – 23/08/2013 San José, Costa Rica –	Latin America and the Caribbean	French Spanish
Capacity building for trade unions on mainstreaming gender equality and empowering women workers	14	10/03/2014 to 21/03/2014 Turin	Middle East	Arabic
Employers' organizations and women entrepreneurs: how to reach out?	17	7/10/2013 – 10/10/2013 Kingston, Jamaica	Caribbean	English
Making markets more inclusive for women and youth to promote entrepreneurship and job creation in Kenya	15	Distance 02/09/2013 – 30/03/2014 Face to face 27/01/2014 to 29/01/2014 Nairobi, Kenya		
Advisory mission to INFN	Not Available	2011 – 2014	Institute of Nuclear Physics (Italy)	Italian

1.4 Numbers that Participated in the Evaluation

The evaluation conducted 12 key informant interviews and meetings with Centre staff and 11 key informant interviews with other stakeholders and partners. The latter included seven staff from Italy's Institute of Nuclear Physics. The evaluation also sent surveys to 321 former course participants. Thirty emails were returned as no longer being valid and an additional five with messages that the persons concerned were not available during the survey period. The total base of potential responses therefore was 283. There were 90 survey responses, giving a response rate of 31%.[3] Combined 113 people participated in the evaluation. Survey respondents were 70% female and 30% male. This is in keeping with the number of male and female participants in the course sample.

1.5 Evaluation Limitations

Evaluation Scope: The evaluation's focus was thematic as opposed to being an assessment of institutional gender mainstreaming processes. Therefore while this evaluation assessed the integration of gender into non-ILSGEN courses to some degree, it did not evaluate gender mainstreaming as a whole within the Centre. In addition, although the evaluation title includes the word diversity, the focus of the evaluation in the TORs was on gender equality. Diversity as a thematic area would need to be covered through a separate evaluation process.

[3] The average response rate for the Centre's follow-up evaluations is 35% that generally only involve one course or learning activity.

Time frame covered: The training and learning activities evaluated were those that took place between May 2013 and June 2014. In a couple of cases, the courses selected were part of a longer term project and related learning activities that were implemented outside the evaluation's time frame may also have contributed to some of the results documented. The report identifies where this was the case.

Changes in Methodology: The case study approach suggested in the TORs for the European Union-funded (EU) GENIS Lab project was to document the experience of three individuals who participated in the GENIS Lab project. The evaluation methodology was therefore originally set up to do this. However, during the in-depth interview process at GENIS Lab it became apparent that this individual case study approach would not capture the full extent of the GENIS Lab experience. It was therefore agreed with the Centre's Evaluation Unit to draft this case study using an institutionally-focused analysis. A review of the types of documents available for review also led to the evaluator concluding that use of a document review form would be inappropriate. Instead, the evaluation reviewed core documents such as end-of-course evaluations for the validity of their design plus their quantitative and qualitative content.

Duration and timing of the Evaluation: The duration allocated for the entire evaluation process was just eight weeks, with the survey administered for two weeks during July, a period that encompassed both summer vacations for some stakeholders and participants as well as both Ramadan and EID. The latter limited the number of Muslim/Arabic-speaking participants in the survey to some degree. The eight-week limit also permitted little flexibility to address issues of stakeholder and participant availability. The evaluation extended the survey deadline by 3 days to accommodate this, but the timing still was not ideal for maximum participation, with several participants having indicated they had just missed the deadline as they had been away from their offices. A key partner from Burundi was also not available for a skype interview due to the elections being held there during the data collection period.

Sample Selection and Size: Given that the non-ILSGEN courses selected had to have a gender marker rating of 2 or 3 (i.e. having either a significant gender content or a predominant gender focus), the evaluation sample did not include courses or learning activities that did not include significant gender content. As such, there is a degree of positive bias in the sample selection.

As the activity sample is fairly small and there are a limited number of Activity Managers and partners responsible for these activities, to maintain anonymity it was often necessary to generalize the findings and not refer to specific course offerings – except where findings were drawn from survey responses, end-of-course and follow-up evaluations or where observations made were informational as opposed to evaluative in nature. In some cases, given the topic being discussed, it may still be possible to ascertain who provided the information reported. This potentially raises an ethical issue with regard to evaluation practice and maintaining anonymity of respondents and is an issue the Centre may need to address in future thematic evaluations.

Budget Data: The evaluation was asked to assess cost efficiency but the documents that the Centre provided the evaluator to review/assess did not include budget data for the specific learning activities reviewed. The assessment of efficiency has therefore focused on the perceived value for money by course participants, Activity Managers and partners. It also reviewed which course modalities appeared to generate the best results. Budget data was,

however, provided for overall funding for each technical programme in 2015 and the 2015 Innovation Fund. While these both fall outside of the evaluation period, the evaluation has used this data as one indicator to assess the prominence given to gender equality by the Centre.

Section 2: Evaluation Findings

This section is divided into five parts, following the key evaluation categories outlined in 1.2. Each part outlines the findings and related evidence associated with that particular evaluation question as well as provides relevant background information. Survey responses were fairly representative of both ILO constituents and course target groups. Tables 1 and 2 summarize who participated in the survey.

Table 1: Gender and Language of Survey Respondents

Gender	English	French	Spanish	Arabic	Grand Total
Male	17	8		2	27
Female	39	14	8	2	63
Grand Total	**56**	**22**	**8**	**4**	**90**

Table 2: Survey Respondent Representation by Course and Sex

Courses/Learning Activity	Male	Female	Grand Total	% of Total Participants in Course
1. Gender Academy	5	24	29	23.6
2. ILO Participatory gender audit facilitators' certification	2	6	8	61.5
3. Gender Equality for Development Effectiveness	4	6	10	52.6
4. Gender and Organizational Change	2		2	5.9
5. Workshop 1: Gender planning and budgeting in Burundi's budget cycle	6	12	18	54.5
6. Linkages between migration, gender, and development in Latin America	1	5	6	17.6
7. Capacity building for trade unions on mainstreaming gender equality and empowering women workers	1	2	3	28.6
8. Employers' organizations and women entrepreneurs: How to reach out?		3	3	17.6
9. Making markets more inclusive for women and youth to promote entrepreneurship and job creation in Kenya	6	3	9	69.2
10. Course not indicated		2	2	-
Grand Total	**27**	**63**	**90**	

Interestingly, the proportion of of male participants who took part in these courses and the number of male survey respondents is exactly the same. However, the percentage of female participants who responded to the survey was 10% less than the percentage of women who took part in the courses (refer to Table 3 below for a comparison of total course participants by sex and total survey participants by course and sex).

2 1. Activity Relevance and Outreach[4]

EQ 1: How well did the activity operationalize the ILO Action Plan for Gender Equality 2010-2015, the Gender Result-Based Action Plan 2012-15 of the Centre and Its four corresponding programmes and budgets?

Table 3 below, based on course participant lists, summarizes course reach with regard to male/female participants. Table 4 summarizes to which sectors survey respondents belonged. Combined this data provides a general overview of who the Centre's gender focused or integrated courses are reaching.

Table 3: Female/Male Participation in Evaluation Sample Learning Activities

***** Activities marked with an asterisk were those that were organized outside of ILSGEN.

Learning Activity	Total Participants	Female		Male	
		#	%	#	%
1. Gender Academy	159[5]	123	77%	36	23%
2. ILO Participatory gender audit facilitators' certification	13	13	100%	-	-
3. Gender Equality for Development Effectiveness	25	19	76 %	6	24%
4. Gender and Organizational Change	34	23	67%	11	33%
5. Workshop 1: Gender planning and budgeting in Burundi's budget cycle	33	20	60%	13	40%
6. Linkages between labour migration, gender, and development in Latin America*	34	18	53%	16	47%
7. Capacity building for trade unions on mainstreaming gender equality and empowering women workers*	14	10	66%	4	27%
8. Employers' organizations	17	16	94%	1	6%

[4] For the purpose of this evaluation relevance refers to the extent to which the objectives of the activity are consistent with beneficiaries' requirements, and partners' and donors' policies.

[5] The initial list of Gender Academy participants also included participants from the course for UN System Gender Focal Points, giving a combined total of 159 participants. For survey purposes only, the Gender Focal Point course participants were not included as they only attended part of the Gender Academy as well as to avoid a conflict of interest since the evaluator served as the lead facilitator for this course.

Learning Activity	Total Participants	Female		Male	
and women entrepreneurs: How to reach out?*					
9. Making markets more inclusive for women and youth to promote entrepreneurship and job creation in Kenya*	13	7	54%	6	46%
Totals	**342**	**249**	**73%**	**93**	**27%**

Table 4: Gender and Sector of Survey Respondents

Participant Sector	Male	Female	Grand Total	% of Total
Government	12	26	38	42.2
Worker's organizations	1	2	3	3.3
Employer's organizations		6	6	6.6
Academic	1	4	5	5.6
Civil society	8	9	17	19
UN agency	2	9	11	12.2
Unemployed	2	1	3	3.3
Private Sector	1	6	7	7.8
Grand Total	**27**	**63**	**90**	**100**

While all of ILO tripartite constituents were represented among the survey respondents there was a much higher proportion of representation from governments. Centre Activity Managers also have observed a trend towards increasing interest and demand for gender-related training from UN agencies. Civil society organizations (CSOs) have also demonstrated a fairly strong interest in gender training and represent the second largest group of survey participants. Activity Managers indicated they had specifically targeted CSOs for some courses (e.g. women entrepreneurs associations). They also noted that for the open courses the mix of personnel beyond ILO's traditional constituents has been quite positive as it allows for a cross-pollination of experience and ideas as well as contributes to building stronger inter-sectoral networks.

Targets for Female Participation

The Centre's Strategic Plan for 2012-15 established an end target for female participation in all Centre courses of 48%, starting from a 2010 baseline of 40.2%. The overall results for female participation in all Centre courses in 2013 was 40.6%, indicating that the Centre has not made little progress in reaching this target. The statistics for the evaluation sample courses, however, show that female participation rates are 33% above the Centre target, standing at 73%. This clearly reflects the gender focus of the ILSGEN organized courses and is not surprising. However, the high female participation rates in these courses may skew the Centre's overall female participation results and it may be that these rates are much lower in non-ILSGEN courses.

It may also be useful to consider the achievement of the Centre's female participation targets using a more nuanced approach. For example, it is important to consider whether the ILO constituents targeted for each specific learning activity actually has a base that is 50% female. If

this base is less than the 48% target, it may not be reasonable to expect this participation level to increase to that level. If so, the female participation targets would need to be set course-by-course based on the specific constituents' group. When asked about this possibility, several Activity Managers indicated that they would like to continue working to address past imbalances and encourage higher levels of female participation than may be representative among the constituents' groups. Consequently, while they thought these targets might be ambitious, they also thought it made sense to maintain them at this higher level.

Taking a closer look at the four non-ILSGEN activities sampled, with one exception, the averages are still much higher than the Strategic Plan targets. This also reflects Activity Managers' expressed objective of trying to reach gender participation parity. Three of the non-ILSGEN courses surpassed this objective, with female participation standing at 53%, 54%, and 66%.

Male Participation

The ***ILO Action Plan for Gender Equality 2010-2015*** includes an indicator for the percentage of male participants completing Centre gender-specific courses. Revisiting Table 4 from this perspective, the results are mixed, although still generally positive given the context and past patterns. All nine courses in Table 1 have a fairly strong gender focus, either in terms of target groups or content or both. With two exceptions, there were still fairly good male participation rates, ranging from 23% to 47%, but with the higher male participation rates still mostly found in the non-ILSGEN courses, e.g. the Linkages between labour migration, gender, and development in Latin America course that targeted a wide range of officials who work on migration issues.

The two exceptions were the certification course on *ILO Participatory Gender Audit Facilitators* certification (ILSGEN) and *Employers' organizations and women entrepreneurs: How to reach out* (non-ILSGEN). For the former, there were no male participants. The challenge here may be a perception that organizations are more likely to hire women to serve as gender auditors. Therefore potential male facilitators may not yet be convinced the course is worth the investment for them. More importantly, there is an extremely small pool of male gender specialists from which to draw and attract to the course and it may be that it is only possible to set a male participant target for the ILO Participatory Gender Audit Facilitators certification course of between 2 to 8%.

For the Employer's organizations course there was only one male participant out of 17 (6%). It should be noted, however, that this activity took place in the Caribbean where there is a common perception that gender equality is not really a problem in the region and that gender issues are mainly women's issues and responsibility.[6] The course evaluation report also noted that this course "*targeted persons having a specific responsibility and experience to share regarding women entrepreneurs in relations to membership, governance, lobbying or services provision strategies"* and encouraged the participation of representatives of women entrepreneurs' associations. This focus also likely contributed to low male participation. The participants discussed this skew in male/female participation in some detail, particularly with

[6] Peebles, Dana. 2014. Gender Analysis of Open and Distance Learning in the Caribbean Region. Vancouver: Commonwealth of Learning. P. 8 -10

regard to how to convince Executive Officers that reaching out to women entrepreneurs was a relevant issue for their organizations.[7]

The Evaluation Matrix indicated male participation was between 21 and 30% rating in gender-focused courses represented a good level of male participation.[8] Seven of the nine courses sampled achieved either close to or surpassed that level (ranging from 24% to 47%). However, the fact that two of the courses sampled had either no or just one male participant indicates there is still a need for specific outreach to men for some courses and to clarify that these courses cover the broader spectrum of how gender equality is about both men and women and that gender equality also benefits both sexes.

Under-Represented Groups

The survey asked if respondents thought any groups were under-represented and if so, which ones. Respondents were roughly divided in half as to their opinion on this issue, with 53% indicating that some groups were under-represented and 47% that this was not a problem. The three main groups they thought were under-represented were people with disabilities (35 out of 54 responses – 64.8%), men (14.8%) and ethnic minorities (13%). In any given population, approximately 10% of the population has disabilities.[9] The Centre's end-of-course evaluations, however, are not currently set up to track the participation of people with disabilities through a self-identification process. One participant also noted a need to include more youth. While this latter group would depend upon the specific course offering, it may also flag a potential area for the Centre to re-examine in terms of target groups among its constituents.

Course Relevance for Participants

The survey also asked participants to what extent the course content was relevant for their professional needs. Their responses were overwhelmingly positive, with there being a combined total of 94.3% indicating that the courses were either mostly or highly relevant.

Table 5: Degree of Relevance of Course Content

Degree of Relevance	Male	Female	Grand Total	% of Total
To a limited extent	2	3	5	5.6
Was mostly relevant	6	29	35	39.3
Was highly relevant	19	30	49	55.0
Grand Total	**27**	**62**	**89**	**99.9**

The end-of-course evaluations included responses from the majority of participants and confirmed the evaluation survey results. A review of these course evaluations found that most participants allocated high ratings with regard to being very likely to apply what they had learned to their work. Only one course scored below the Centre average and that was a relatively negligible difference of 4.43 compared to the Centre average of 4.45. The rest scored above the Centre average, ranging from 4.48 to 4.79 out of 5.

[7] ITC-ILO. Oct 2013. Final Report - Employers' Organizations and Women Entrepreneurs: How to reach out. Turin: ITC-ILO. P 6 – 7.

[8] There were no specific targets set for male participation in the ILO Gender Action Plan

[9] http://www.webmd.com/health-insurance/20110609/1-billion-people-are-living-with-disabilities

Operationalization of Budget

The Centre is quite active in the thematic area of gender equality and senior management regards it as one of the Centre's flagship programme in terms of prominence, reputation and budget support. Table 6 shows that for 2015 captive funding for ILSGEN was the fourth highest out of ten programme areas, with the top three representing programming that targets ILO's tripartite constituents. Additionally, while also outside the parameters of the evaluation period, it is important to note the Centre's 2015 call for proposals through its Innovation Fund disbursed over 250,000 Euro to finance a series of new product developments related to gender equality.[10] ILSGEN, it should be noted, is responsible for providing technical support on the integration of gender equality to all programme areas in addition to offering gender-focused learning activities.

Table 7: Allocation of Captive Funds by Technical Programme Area - 2015

Technical Programme Areaa	Allocation of Captive Funds by Technical Programme Area in Euros	Percentage of Total
Workers' Activities	828,556	18.5
Enterprise, Microfinance and Local Development	735,000	16.4
Employers' Activities	715,500	15.9
International Labour Standards, Rights at Work and Gender Equality	515,708	11.5
Social Protection, Governance and Tripartism	430,000	9.6
Training Directorate	405,377	9.0
Distance Education and Learning Technology Applications	195,000	4.3
Employment Policy and Analysis	330,000	7.3
Sustainable Development	280,000	6.2
Partnerships and Programme Development Services	50,000	1.1
Total	**4,485,141**	**99.8**

Source: 2015 - Allocation of Captive Funds by Technical Programme. ITCILO - 7/8/2015

Summary of Findings related to Relevance (Question 1)

1. The Centre's approach to the thematic area of gender equality is well in line with the *ILO Action Plan for Gender Equality 2010-2015, the Centre's Gender Result-Based Action Plan 2012-15* and the corresponding four programmes.
2. The non-ILSGEN courses selected for review demonstrated a clear commitment to the integration of gender equality in the related technical programmes.[11]
3. Female participation in the courses selected for review is generally above the Centre's average. However, as these courses were heavily focused on gender, these high participation rates may be skewing the Centre's overall averages regarding female participation.

[10] Innovation Fund 2015: Theme – Reaching Out to Women. ITCILO – TDIR – 15.5.2015

[11] Refer to the Centre's Gender Result-Based Action Plan 2012-15. Section 2. Substance. Area: Commitment to gender equality is internalized throughout the Centre's Training Programmes and reflected in all technical work, operational activities and support services.

4. While under-represented in selected courses, overall the Centre has been successful in attracting a reasonable number of men to participate in gender-focused training.
5. People with disabilities remain significantly under-represented.
6. Course content across the board was highly relevant for the large majority of participants.
7. Funding allocation for ILSGEN is the fourth highest after programming to support ILO's core constituents.

2.2 Validity of Activity Design[12]

EQ2: Were the intended results of the activities logical and realistic?

To establish whether the intended results of learning activities were logical and realistic, the evaluation interviewed Activity Managers for each sample course and posed two related questions to participants. Activity Managers indicated that while overall they thought course expectations were realistic and the materials presented logically, there was a tendency to try and cover too much material. As most courses are offered more than once, over time they have been able to adjust the course materials to be more realistic. They find this also improves course results as it gives participants a better opportunity to absorb new concepts, information and skills. Tables 8 and 9 summarize the survey questions related to validity of activity design.

Table 8: Link between Course Level and Participant Level of Knowledge and Skills

Degree of Appropriateness	Male	Female	Grand Total	% of Total
Level was too basic	1	4	5	5.7
Course required more knowledge/skills than participant had	1	5	6	6.8
Course built upon previous level of knowledge and skills	25	52	77	87.5
Grand Total	**27**	**61**	**88**	**100**

Table 9: Degree to Which Activities related to Gender Were Logically Presented

Degree of Logical Presentation	Male	Female	Grand Total	% of Total
Some of the time		8	8	9
Most of the time	16	29	45	51.1
All of the time	11	24	35	39.8
Grand Total	**27**	**61**	**88**	**99.9**

End-of-course evaluations also asked how appropriate the activity's contents were compared to the course's objectives. The responses indicated that four of the nine courses were below the Centre average of 4.27 (although two only by .07) and three above this average. Combined with the data from the survey questions, ***the overall impression is that while overall, the courses are designed in a logical and realistic way that there is still some room for improvement***. The ratings are still fairly high but not quite as high as for course relevance. Ratings are also much stronger with regard to courses being appropriate for participant's prior levels of knowledge and skills. This speaks to both ***appropriate activity design as well as participant selection.***

[12] Defined as the extent to which the design of the activity was logical and coherent.

EQ 3: Did the end of activity evaluation and (where applicable) the follow up activity evaluation effectively measure results and progress?

Adjusting for participants who did not remember the course evaluations and, consequently, taking the base number of responses as being 70, 82.2% of the participants thought the course evaluations assessed the results effectively. Activity Managers, however, unanimously agreed the course evaluation question on gender is not very clear. They cited receiving very diverse and sometimes unexpected results to this question, e.g. a lower than average rating on how well the course integrated gender even though the main focus of the course had been gender. The gender-related question is: "*Have gender issues been adequately integrated in the training?"* The key challenge lies in the fact that there is still a wide range of understanding of what integrating gender means among participants.

While there are two end-of-course evaluation questions address that results directly they are very general in nature since this evaluation has to be used for all Centre courses. These two questions are: "*How likely is it that you will apply some of what you have learned?"* and *"How likely is it that your institution/employer will benefit from your participation in the activity?"* In addition, since these questions are posed at the end of each course, participant responses are indicative as opposed to definitive in nature. Thus the results of the follow-up evaluations are more salient on this question. A more detailed analysis of post-course results can be found in Sections 2.3 and 2.4. Interviews with both Activity Managers and other stakeholders/partners however, indicated that while they could cite some course/learning activity results, most could only do so for a few participants from each course.

The main exceptions were those who ran activities within the context of a technical cooperation project or where their technical partners did more intensive or systematic follow-up. However, not all longer-term learning activities/projects conducted follow-up evaluations. For those courses where there were no follow-up evaluations, knowledge of the specific results stemming from the learning activities relies heavily upon anecdotal information and participant follow-up is not systematic or often is built into the course process.

Another challenge was related to sometimes low response levels to follow-up evaluations. In one course, for example, participants had to develop action plans as a part of their course work. These were intended to provide both concrete ways in which the participants could utilize course materials and new skills as well as to help regional staff involved in the related project to track and monitor progress. However, of 17 participants, only three responded to the follow-up evaluation conducted six-months after course completion. The Activity Manager was therefore only aware of a few participants who had implemented their action plans for this particular course. In addition, not all final reports included the end-of-course evaluation results or an analysis of the courses' strengths and recommendations regarding how they could be strengthened, thus weakening the overall effectiveness of these reports.

Since the evaluation questions were designed to be generic to facilitate comparisons across all learning activities, they do not provide much space for the documentation of course-specific results. In the follow-up evaluation reports available for this evaluation, the sections that reviewed qualitative comments on results did not aggregate or analyze these results, but simply listed all of them. This did not provide any real value added to the follow-up evaluation process.

EQ 4: How likely was it that the intended results were to be achieved?

Table 10 below shows how realistic survey respondents thought the learning objectives were for their specific courses.

Table 10: Degree to which Learning Objectives Were Realistic

Degree to which realistic	Male	Female	Grand Total	% of Total
Only a bit realistic	1	1	2	2.3
Some of gender-related learning objectives were realistic	2	6	8	9
Most of the gender-related learning objectives were realistic	15	30	45	51.1
All of the gender-related learning objectives were realistic	7	23	30	34
There were no explicit gender-related learning objectives	2	1	3	3.4
Grand Total	**27**	**61**	**88**	**99.8**

While 85.1% of participants thought that most (51.1%) or all (34%) of course objectives were realistic, 11.2% did not. This is likely related to the problem identified by Activity Managers of sometimes trying to cover too much material in a short time frame. Where there were blended on-line courses, this challenge was easier to avoid as much of the material could be covered prior to the face-to-face activity.

What appeared to help in setting realistic learning objectives was close Activity Manager and partner knowledge of, and a direct relationship to, the course target groups. Activity Managers for courses that were part of a larger technical project that targeted specific groups with whom they had an on-going working relationship found it easier to develop fairly realistic learning objective and obtain the related results. This was generally more difficult to do in the open courses – although the blended courses were able to establish this kind of relationship through the relationships built up during online training exchanges and interactions with participants. The end-of-course question on "*To what extent were the activity's objectives achieved?"* received a below average score for four of the gender-focused open courses whereas four of the targeted courses had scores that were significantly above the Centre average. While this sample size is too small to determine definitively if it is the open or closed nature of the course that is a contributing factor, it does potentially flag a possible difference to be tracked on a comparative basis in the future.

Findings Summary – Validity of Activity Design (Questions 2 - 4)

- Learning activities are generally well designed from a logic perspective but sometimes try to include too much material in a short time period.
- Course participants found the course evaluations to be an effective means of measuring results but Activity Managers have found the question on gender to be unclear.
- The end-of-course evaluations can only capture speculative results following course completion. Follow-up evaluations are generally well designed (although a bit generic in nature) but not conducted systematically for all courses so it is only possible for the Centre to document and track a limited amount of specific results.

- Final reports on courses do not always include the end-of-course evaluation results or analysis of the courses' strengths or recommendations regarding how they could be strengthened.
- Activity Managers are generally not that aware of, or able to track, post course results.

Results

2.3 Effectiveness[13]

EQ 5: To what extent have the activities been an effective instrument to help promote gender equality in the world of work?

The participants survey focused five of 26 questions on post-course results. The related responses are summarized in Tables 11 and 12.

Table 11: Frequency with which Participants Able to Apply Course Gender Knowledge/Skills

Frequency Able to apply	Male	Female	Grand Total	% of Total
Not at all		1	1	1.1
Occasionally	6	26	32	36.8
On a monthly basis	8	18	26	29.9
More than once a month	13	15	28	32.2
Grand Total	**27**	**60**	**87**	**100**

The majority of respondents (62.1%) indicated they were able to use the knowledge and skills they acquired through the training on a regular basis. This, however, still leaves a significant minority that only used them occasionally. Of this latter group, when asked why this was the case, just over half (18) answered this question using the survey's pre-coded answer options and an additional six provided alternative reasons for a total of 24 respondents. Equal numbers (37.5%) indicated they did not feel they had sufficient skills or knowledge to apply them to their work more frequently and that the environment in which they worked was not supportive. In the "other reasons category", three also indicated they had changed jobs and that their specific gender skills and knowledge were not applicable in their new sector of work. One noted that they worked in the financial sector which they perceived to be gender neutral. Two cited lack of financial resources as an issue.

Given the sensitivity of gender as an issue it is not surprising that several respondents did not find themselves in a supportive working environment or that financial resources to apply gender analysis or related skills were not given a priority. Of greater concern, is the fact that so many of this group of respondents felt they had not acquired sufficient skills and knowledge to apply the course materials to their work and that those who had moved jobs did not think that what they had learned was applicable to their new positions or sectors. While some of the courses offered were sector specific, most should have included conceptual thinking and analysis tools that could be transferred to any sector.

[13] Defined as the "Extent to which the activities' immediate objectives were achieved, taking into account their relative importance".

Conversely, when the 59 respondents who indicated they were able to apply their new knowledge and skills on a monthly or more frequent basis were asked what factors contributed to this, they indicated the following:

- Their advocacy skills were strengthened as a result of the learning activity (29 respondents/49.1%)
- Their new skills and knowledge were very applicable to the context in which they worked (28 respondents/47.45)
- They received support from their colleagues to do so (2 respondents/3.4%; plus an additional two qualitative comments indicating that a supportive environment and institutional culture were important factors).

The significant finding here is that ***the acquisition of stronger advocacy skills and of knowledge applicable to their work appears to have been a much more important factor influencing their ability to apply their new skills and knowledge than whether or not they worked in a supportive environment.***

When asked how what they had learned had contributed to changes related to gender equality where they worked and how likely these changes were to be sustained over time, participants responded as outlined below. They had the option of picking more than one type of change.

Table 12: Type of and Sustainability of Changes to Which Courses Contributed

Type of Changes and Results	Total Changes	Total – Changes Likely to be sustained	Likelihood of Changes being Upscaled or Replicated
Able to influence a change or changes in how their organization addresses gender	**43**	**29**	**37**
Able to train colleagues about what they had learned	**34**	**44**	**46**
Able to set up or participate in a gender-related network	**30**	**29**	**30**
Increased representation of women in the leadership of their organization	**14**	**15**	**20**
Increased representation of women in organization membership	**9**	**12**	**14**
None of the above	**13**	**10**	**4**

Of significance is that the highest categories for results is that course participants were able to influence how their organizations address gender and being able to train their colleagues about what they had learned. Fewer respondents (although still the large majority) were confident that they would be able to maintain these institutional changes in the future. They were, however, still fairly confident that they could replicate or upscale these changes in the future. A higher percentage thought they would be able to both train colleagues in the future and to upscale and replicate this change. This possibly indicates that transfer of knowledge requires more time to put into place. They also remained confident that they would be able to maintain their participation in gender-related networks as well as to replicate and upscale this result. While lower numbers of respondents were able to help increase women's leadership in their organizations and in organizational membership, their confidence in this increasing in the future

and being replicated or upscaled was also higher. This again may suggest that this change area may be one that requires a somewhat longer-term view to achieve and track.

In the "Other" category, one respondent noted that the training made them more conscious of gender issues within their workplace. Another gave a concrete example of how they were able to influence how their organization addressed gender, indicating that it helped them integrate gender issues in Ethiopia's United Nations Development Assistance Framework. Two noted they were able to introduce the use of gender-sensitive language in their work. A fifth respondent indicated it has helped them gain greater appreciation for the work that women do in their workplace and for their work to be judged more on merit as opposed to on their gender.

For specific courses Activity Managers and partners observed the following results.

1. Workshop 1: Gender planning and budgeting in Burundi's budget cycle: This was a two-year project led by the Ministry of Finance in Burundi which targeted decision-makers in the country's line ministries and CSOs for local development in three provinces. UN Women in Burundi also provided technical support for this project and to a lesser degree also the Ministry of Gender. The training objective was to build capacity in GRB among line ministry staff. The Ministry of Finance with the help of the Gender Ministry helped train staff from the Ministry of Agriculture and created working teams to deliver the training to other line ministries as well as their own staff.

As a result of this training, participants realized Burundi's budget cycle procedures needed revision. There was formerly no reference to gender in the government's letter for proposals format. Through the course, government staff realized they were in a gridlock position as line ministries were waiting for a directive from the Ministry of Finance/Ministry of Gender before doing this systematically and the Ministry of Finance was expecting line ministries to start integrating gender into their letters of proposal as a matter of course. How to address this problem was discussed in detail during the workshop. In addition, the theme of gender responsive budgeting generated considerable interest and the initial Training of Trainers workshop was able to attract 33 participants with a good mix of male and female participants.

2. Linkages between migration, gender, and development in Latin America: Prior to the course,In the region many regarded migration as a security issue. Consequently, labour migration is mostly dealt with under Home Affairs. UN Women, which collaborated on this project, was able to bring in expertise that helped participants look at the specificity of men and women's migration experience, its underlying causes and how to address the issue through a gender lens. Overall participants learned that this issue was not about having female migration policy, but how to look at and address the needs of both female and male migrants in the region. They also learned that migration is also a labour as opposed to solely a security issues. The main target groups for this training were the ILO tripartite constituents. In this instance, however, depending on in which institution the issue is addressed by government, outreach and participation went beyond the Ministry of Labour.

3. ***Gender and Organizational Change:*** The main source of feedback was from the end-of-course evaluation. These results had scored somewhat below the Centre average regarding achievement of course objectives (3.94 compared to 4.17). Participant observations and recommendations were that many would have preferred that the course use less theoretical,

more concrete and gender-related content, including more case studies and practice exercises. They also noted that they were not starting from the same knowledge base on gender-related issues and that this heterogeneity prevented them from going further into the use of different tools. Some suggested that it would have been good to provide more information about the training contents and planning at an earlier stage, so that they could better evaluate if it met their needs and capacity. [14]

4. ***Gender and Developmental Effectiveness***: This course was designed to familiarize participants with "strategies and tools that work" for advancing gender equality in development planning. It was built on experiences and good practices collected by UN Women and the Centre at the national and international levels. It had a particular focus on how concrete actions could be taken to align national and sector level development policies, programme and budgets with gender equality priorities.[15] This course also scored below the Centre average for achievement of course objectives, although not significantly so (3.96 compared to 4.17). The final report for this course, however, does not provide any comment or analysis regarding this theme. It simply observed that while an informal evaluation found that the international context and the diversity among participants was appreciated, the results of the formal evaluation questionnaires were still being processed and would be analysed late in relation to the Centre's overall benchmarks.[16] There was however, no qualitative feedback provided by participants for recommendations for change in the end-of-course evaluation and no clear indication of what the course results were beyond the outline of its learning objectives in the course flyer and final report. It was however, possible to track significant course results through the evaluation survey through where there were 10 respondents for this course. This represented just over half of the course participants. Of these, one skipped all the results-related questions and two picked the option of "none" of the results listed. The remaining 7 respondents had the option of picking more than one option and answered as follows:

- Able to train colleagues about what they learned (30%)
- Able to influence a change or changes in how their organization addresses gender (40%)
- Able to set up or participate in a network related to promotion of gender equality (40%)
- Increased representation of women in leadership in their organization (10%); increase in women's membership in their organization (20%).

5. ***2013 Gender Academy*****:** Activity Managers and some participants in the evaluation survey noted the formation of active networks among participants that continued after the learning activity was a particular benefit or result. This speaks directly to one of the Academy's four main objectives to gain knowledge, get tools, share experiences and information with individuals and/or organizations with interests in mainstreaming gender equality and identify appropriate strategies for collaboration, and network to use research, networking, and knowledge sharing to assemble appropriate resources on mainstreaming gender equality.

The 2013 Gender Academy was evaluated through both ad-hoc and standardized tools. These included an ad-hoc questionnaire at the end of each learning track; the Centre's end-of-course questionnaire; an open evaluation session performed in plenary on the last day of the event; and feedback from informal exchanges and interviews. The end-of-course evaluation showed

[14] ITC-ILO. 2014. Final Report – Gender and Organizational Change. Turin: ITC-ICO

[15] ITC-ILO. 2014. Final Report – Gender and Development Effectiveness. Turin: ITC-ICO

[16] ITC-ILO. 2014. Final Report – Gender and Development Effectiveness. Turin: ITC-ICO

achievement of learning objectives was in line with the Centre average (4.1). A follow-up evaluation done indicated that 70.1% of participants said their competencies improved to a large or very large extent (56.1% and 14% respectively).[17] The improved competencies most cited by participants included:

- Identifying problems and providing solutions (64.9%)
- Analyzing (59.6%)
- Networking (52.6%)
- Planning and organizing projects/people (52.6%)
- Training others (49.1%)
- Just over one-third often make use of networking opportunities
- Roughly 50% often or frequently make use of the Gender Academy training materials and documents
- 59.2% have engaged in related training for their own institutions, and 18.4% have conducted related training for other institutions. [18]

Despite this having been an open activity with a highly diverse group of participants from different sectors who required equally diverse learning activities, close to one-third of the follow-up respondents indicated that their participation in the Academy had contributed to either a large or very large improvement in their organizations (29.1 and 2.1% respectively). Of the 47 respondents who answered this question, 61.7% cited the impact outside their organization as having been medium to very large (44.7% and 14% respectively).[19] This was possible as the Academy offered diverse thematic tracks and networking opportunities that accommodated and met the needs of the highly diverse constituents and participants. It also represents a strong result.

6. ***Employers' organizations and women entrepreneurs: How to reach out?*** This 4-day course was a follow-up from a training workshop held in Turin in November 2011 in partnership with the Dutch Employers' Cooperation Programme. As more funding became available, the course evolved into a global project with the same training provided in five regions followed by a global stocktaking conference to reflect on remaining challenges, next steps on action plans, and to reinforce network building. The other regional workshops took place outside of the time frame for the evaluation period and so were not included in this review. Prior to the specific course evaluated, participants were asked to take part in a survey about the state of play for women entrepreneurs in the Caribbean. This was used to customize the course and help target the specific needs of employers' organizations in this region.

The course objectives for the regional workshop held in Jamaica in 2013 were i) to understand what is the potential of Caribbean women entrepreneurs and the specific obstacles they face in doing business: ii) To learn about good practices of Employers' Organizations in reaching out to women entrepreneurs; iii) To have participants review their own organizations and identify areas for improvement; and iv) To get practical tools, tips and methodologies from experts and

[17] From a sample of 57 respondents in a survey for which there was a 37% overall response rate (59 participants) out of a possible 159.

[18] ITC-ILO. 2014. Follow-up Evaluation: 2013 Gender Academy. Turin: ITC-ILO.

[19] ITC-ILO. 2014. Follow-up Evaluation: 2013 Gender Academy. Turin: ITC-ILO.

peers. The end-of-course evaluation for the achievement of course objectives showed a score of 4.7, significantly above the Centre average.[20]

Participants also developed individual action plans for their organizations as a part of their course work. Regional colleagues were tasked with following up with each participant on these action plans. Unfortunately, only three participants (18.7%) responded to the 6-month follow-up survey and to the evaluation survey so it is not possible to draw definitive conclusions from their responses. Between this feedback and that received at the follow-up global conference, it appeared that most participants from the Caribbean workshop had not implemented their action plans. However, this was only one indicator the Centre was using to measure success. Others included the building of networking opportunities and that employers' organizations become more cognizant of the services they offered to their female members. From the global follow-up conference, additional results cited by participants were that they were able to extract lessons learned about good practices from other regions and learned how to both do and use infographics, which they have found to be an effective organizational tool.

7. ***Making markets more inclusive for women and youth to promote entrepreneurship and job creation in Kenya:*** This training was designed to help participants gain better understanding of value chain development and share and apply this knowledge with partners and other stakeholders within a local context. It took place within the context of the ILO Youth Entrepreneurship Facility project in Kenya that provided a wide range of resources and products for young entrepreneurs. This specific workshop contributed to this project by both expanding participants' knowledge of value chain development and helping them build a network of professional colleagues working in this field. As a part of the course, each participant had to work on a follow-up value chain project and partners reported that all were able to complete this project. The course's gender component was in the groups targeted , the integration of gender throughout the course design, as well as inclusion of a specific gender and value chain development model.

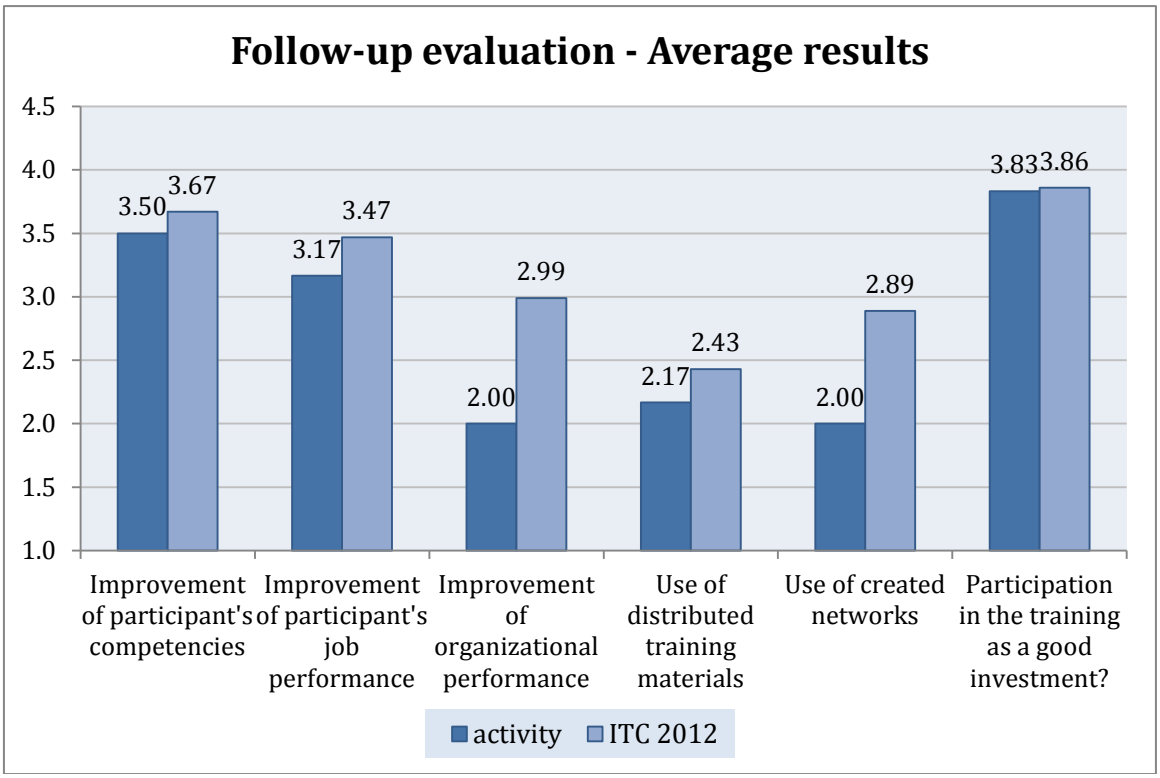
8. ***Capacity building for trade unions on mainstreaming gender equality and empowering women workers:*** This course introduced participants to a range of gender equality issues within a trade union context, targeting trade unions in the Middle East. One challenge course organizers/facilitators found was that the structure of trade unions in Middle Eastern countries is very hierarchical and its members/leadership not always open to new ideas. This may be one contributing factor to the fact that the course evaluations showed that the score was 3.79 for achieving course objectives compared to the Centre average of 4.17. In the evaluation survey, one participant noted that the course time frame was not sufficient to learn everything one would need to know about how to mainstream gender and empower women workers within a trade union context as it covers quite a broad area for learning. In the end-of-course evaluations participants did, however, note that they were highly likely to apply what they learned (4.54 out of 5, compared to Centre average of 4.45). This was confirmed to some extent through the evaluation survey responses for this course. There was a 33.3% response rate for this activity (5 out of 14 participants), and all respondents reported multiple results stemming from their participation. Significantly this included an increase in female leadership and membership in

[20] ITC-ILO. 2013. Final Report - Employers' organizations and women entrepreneurs: How to reach out? Turin: ITC-ILO.

their respective organizations as well as being able to influence how their organizations address gender and being able to train their colleagues about what they had learned.

9. ILO Participatory gender audit facilitators' certification: A key result for this course is quite immediate as participants have to pass a certification test prior to completing the course. Once certified, to maintain their certification each participant has to conduct an institutional gender audit within three years of having obtained their certification. The end-of-course evaluation for both the face-to-face and on-line components had high scores of 4.69 and 4.64 respectively for having achieved its objectives (compared to the Centre average of 4.18). The Activity Manager indicated that in the years the Centre has offered this course, only three participants have not passed their certification tests. This is in part due to the fact that they are very careful to ensure the participants selected have the capacity for the course. In the one instance when they were asked to make an exception and they did, it turned out to be a struggle for that particular individual. The evaluation also was able to interview one former participant from this course and received very positive feedback regarding what this person learned and was able to apply to their workplace. For the follow-up evaluation for the 2013 offering of this course, 46% of respondents indicated the results outlined in Figure 1 and show a more immediate impact on individual participant competencies and job performance than in organizational performance. This seems appropriate for the time frame as it takes some time to effect change related to gender equality within an institutional context.

Figure 1: Results for 2013 ILO Participatory Gender Audit Course



Source: ITC-ILO. 2014. Follow-up Evaluation for ILO Participatory Gender Audit Course.

10. **GENIS Lab project:** This project with the INFN is described and analyzed in detail in the case study that follows the report recommendations. However, it should be noted here that this

learning activity included ongoing technical support related to gender equality combined with related staff training for the Institute. This technical support took place within the context of a broader European Union project designed to help female researchers advance in their careers. INFN staff identified key results as including four main areas: i) Increased awareness among professional staff and management of gender differences in male and female researchers' career paths; ii) An institutional analysis and documentation of these differences; and iii) Development of a pilot system to categorize professional competencies for each staff position as a means of promoting a more merit-based form of performance evaluation; and iv) Development of a Tailored Action Plan (TAP) to promote increased gender equality within the Institute that included clear actions, targets, performance indicators and resource requirements.

General Results of Open Courses

Activity Managers indicated they have been getting feedback that the way in which the Centre addresses gender in its courses has also contributed to the Centre's positive reputation. One observed that this reputation could not happen if their courses did not have meaningful results. Anecdotal evidence for these courses has also been positive. The considered opinion of some Activity Managers is that the Centre has achieved a high level of professional quality, but that they are still struggling with quantity (i.e. the numbers of people from ILO's tripartite constituents they are able to reach) with their gender-focused or integrated offerings. Another result of the open courses on gender has been increased referrals to colleagues and Activity Managers have observed a pattern of participants in subsequent course offerings coming from the same organization as past participants. The evaluation survey also found that 24% of respondents indicated they had been referred by a colleague. There has also been a growing demand for customized courses within the gender thematic area, particularly from other UN agencies.

Activity Managers also indicated it is more difficult to measure the results of open courses and that often this is limited to individual feedback they receive from specific participants. Some keep in touch for several years. When the participants do follow-up with Activity Managers, they generally indicate what they have been doing as a result of the course and which specific course tools they used, e.g. established a gender department in the Ministry of Labour.

Factors Contributing to Positive Results

A critical success factor has been prior knowledge of the organizations with which the Centre works. Activity Managers interviewed said they had access to this knowledge/relationship for the closed courses where they worked with ILO constituents on an on-going basis, or through technical cooperation projects where their partners had access to this knowledge. In both contexts, this greatly facilitated Activity Managers being able to tailor the learning activities very specifically to the participants' needs and to have a good sense of participant capacities.

Challenges related to Achieving Results

One Activity Manager has found that it is more difficult to maintain course participants' networks among male participants and that female participants are more likely to keep in touch following course completion. Two observed that sometimes course objectives were overambitious in terms of the amount of content the Centre is trying to cover in a short period of time. This can lead to the courses having very dense agendas. For a couple of courses, there was also limited access to data or case studies that fit the local context. This led course designers to rely on sharing similar international experiences. The Activity Managers, however,

think use of local case studies and examples need to be included as much as possible to make the courses more relevant for participants.

When working with trade unions, one challenge that sometimes arises is that the Centre has limited control over who is selected to participate. The final selection decisions are generally made by union heads who do not always have the same selection criteria in mind as the Centre's Activity Managers. This can also sometimes lead to problems related to participants' capacity. By the same token, however, the persons selected by union heads may be in a position to be more influential with regard to sharing their new skills and knowledge. Another Activity Manager also noted that sometimes the organizations they work with appoint staff to take part who are not particularly interested in the course theme.

Findings Summary: Effectiveness (Question 5)

It should be noted here that the changes/results outlined above were all recorded within a relatively short time frame following learning activities completion. Significant change related to gender often takes years. As such, this high level of results within a year to a year and half of course completion is a strong success indicator. These results can be summarized as follows:

- There is clear evidence the Centre's learning activities that either focus on gender or which integrate gender to a significant degree are helping participants make or influence changes related to gender equality where they work.
- Some of these changes are more immediate (e.g. changes in how the institution addresses gender, training of colleagues and networking). Others, such as increased female participation in leadership and organization membership, appear to take longer to see and this change happens to a lesser degree (except for the course for the trade unions where this was the main result cited).
- Most survey respondents and all partners interviewed saw these as sustainable changes.
- These results have been reported by just over 62% of participants. This represents a fairly high results rate for an adult education course/learning activity and even more so in the area of gender which often requires participants to absorb new ideas and values in addition to specific skills.
- This success rate appears to be in part due to the use of blended course modalities which give participants more time to learn new concepts and ways of thinking and to the Centre's familiarity with its different target groups.
- **Overall, this represents a solid outcome for the Centre's approach to gender through learning activities and one that demonstrates the overall high quality of the Centre courses that fall under the gender thematic area.**
- A remaining area of concern, however, is how to strengthen its course-based activities for the close to 20% of respondents who felt they did not have sufficient skills and knowledge to effect change related to gender equality in their place of work following completion of their training. This may be related to participants' capacity prior to participating in the course.

2.4 Activity Impact Orientation[21]

EQ 10: a) To what extent have the results of the activities been maintained or up-scaled by participants thus far? (evaluation question added by evaluator to those in TORs)
b) How likely is it that the results of the activities will be maintained or up-scaled by the participants?

Of note, is that 74 (93.6%) of the 79 respondents who answered a question about whether the changes outlined in Section 2.4 would be replicated or upscaled in the future felt that they would be. In addition to the specific types of replication or upscaling areas identified in Table 10 below, multiple respondents also gave concrete examples. These included:

- Being able to contribute to discussions at a much higher and wider level of thinking due to the training the respondent had received through the Gender Academy, also supported by the regular newsletter they receive from the Centre.
- One respondent now plans on working with other persons working in the gender area to exchange their experiences and plan joint training and advocacy initiatives to strengthen their approach to gender advocacy.
- Another noted that during the appraisal process at the ILO, appraisers advocate and mainstream gender issues into the project strategy and logical framework of project proposals. They felt this was likely to be replicated in other management tools during the lifespan of the project on which they are working (e.g. in the work plan, implementation plan, M&E plan and evaluations) as well as in future projects as well by project designers in ILO headquarters and field offices (also taking into account that gender equality is part of the mandate of the ILO).
- Encourage colleagues, especially women, to participate in promoting gender equality and to participate in making decisions.

For specific courses the evaluation was able to identify the following examples of replication or upscaling for five learning activities.[22] These findings were confirmed through the evaluation survey and interviews with partners and/or Activity Managers,

1. Making markets more inclusive for women and youth to promote entrepreneurship and job creation in Kenya: This training served to ***create a small corps of national professionals who now have expertise in value chain development and are able to offer their services to a wider base of community and other organizations.*** The project was also able to fund two additional related trainings for the same trainees that further deepened their expertise, including regarding how to integrate gender into value chain development approaches. It appeared to directly benefit primarily independent consultants who worked in this field, but indirectly has

[21] Defined as the strategic orientation of the activity towards making a significant contribution to broader, long-term, sustainable development changes, and whether the changes have been durable/were replicated by beneficiaries.

[22] This does not mean there was no upscaling or replication for the other courses, but these examples were what the evaluation was able to document. This is a particular challenge for the open courses under the gender thematic as participants tend to follow up with the ITC-ILO on an individual, ad hoc basis. Therefore the main information for these courses is anecdotal and not in sufficient quantities to be able to make a definitive conclusion or observation.

made this type of training more affordable and accessible at the national level. Formerly, it was necessary to bring in international experts in this field at considerable cost. Stakeholders indicated that this small group of trainees have since been training others but did not have any statistics on how many have been trained as a result.

2. For the ***Workshop 1: Gender planning and budgeting in Burundi's budget cycle project,*** there was also considerable replication of results. Indeed, ***the upscaling of the GRB training went far beyond expectations*** and the line ministries adapted the training materials from the initial TOT to fit their own contexts. The final tally of participants trained by the TOT facilitators after two years was as follows:

- For civil society and university personnel – 25 participants, with 12 women and 13 men
- Ministry of Finance staff (beyond the TOT) - 33 participants (23 women, 10 men)
- Ministry of Information - 29 participants (26 women, 13 men)
- Local development CSOS – 21 participants
- Ministry of Gender – 20 participants
- Ministry of Public Security in Kayanza - 32 participants (2 women, 30 men)[23]

One line ministry also contributed their own financing for their staff to take part in the training.

3. ***ILO Participatory Gender Audit Course:*** A key objective of this course is teach participants how to conduct this gender auditing method. Participants are required to conduct at least one gender audit using this methodology within three years to maintain their certification. In the first pilot cohort in 2012, out of 16 participants, 11 participants have conducted gender audits. From the 2nd cohort in 2013, of 13 participants, four participants have conducted audits thus far.[24] Currently the ILO Geneva – which originally developed this gender audit methodology, tends to contract the services of the Centre's staff to conduct gender audits on behalf of different constituents. It was observed by Centre staff that it might be easier for the course participants to find gender audits to facilitate if they could also be included in the list of certified facilitators for these participatory gender audits.

4. ***Capacity building for trade unions on mainstreaming gender equality and empowering women workers.*** The main result which participants indicated was being upscaled or replicated for this course (through the evaluation survey) was to increase women's membership in trade unions. In this context, this is a fairly significant form of upscaling.

5. For the **GENIS Lab project** with the INFN, by the end of the four-year project, INFN management had agreed to apply this competency-based form of assessment to all 28 locations where the Institute operates. This represents a very strong result, particularly given the starting point of the INFN as one where its researchers had very little knowledge about institutional gender equality issues.

Findings Summary – Activity Impact Orientation (Question 10)

- It was possible to document sustainable and/or upscaled or replicated results for 50% of the specific learning activities reviewed and for 93.6% of survey participants.

[23] Interview with Activity Manager based on data provided by UN Women Burundi. June 2015.

[24] Follow-up data provided by ILSGEN staff.

- The primary ways in which gender-related learning activities have been scaled up, or replicated, are with regards to training of colleagues, influencing changes in how the participant's organization addresses gender, and the ability to either set up, or participate in, a gender-related network.

2.5 Efficiency of Use of Resources[25]

EQ 6: a) Have the resources invested into the delivery of the activities been used in the most efficient manner? b) How economically were resources and inputs (funds, expertise, time etc) converted to results? C) Did the results justify the cost?

The evaluation asked participants, Activity Managers and partners if they thought the time and money invested in the courses they attended or organized were an efficient use of their respective resources. From the participants' perspective, an overwhelming majority of survey respondents indicated that it was, with close to 86% (out of 78 respondents agreeing with this statement (35.9% to a large extent and 50% that it was a highly efficient use of resources). Only 3 of 78 respondents felt it was not efficient at all and another 10% only to some extent.

When asked if there were any alternatives that would have been more efficient, however, 39% (29 out of 74 respondents) said they did think there might be more cost efficient ways of learning similar skills and knowledge related to promoting gender equality. Their main concern appeared to be with the high cost of travelling to Turin.

Activity Managers and partners also had a positive view of learning activity efficiency, but shared a similar observation regarding the training location. Most also commented on the fact that it is more efficient to manage a training course within the context of a project as that way there is more one can do to follow up to further leverage learning activity impact. In addition, the work of identifying participants, logistics and other management arrangements is divided with project partners – allowing for a more efficient use of the time of all concerned. In addition, project partners are often closer to the key target groups and can help identify the optimal participants to maximize training results.

For the course on the "*Linkages between migration, gender and development in Latin America"*, there is an open course available on a similar theme that is inter-regional which could have potentially served as an alternative. However, its focus is sufficiently different that the holding of the Centre-UN Women course was justificed as it had a very specific target group while that of inter-regional course was more general in nature. Overall, Activity Managers viewed the blended online and face-to-face course model as being more efficient even though they require more financial and human resources than a course that is only face-to-face. They have found that participation in the online portion of blended courses requires a stronger commitment to learning about the issues covered on the part of the participants. Some Activity Managers therefore thought this training modality has a greater likelihood of contributing to course intermediate and longer-term objectives being achieved. In addition, the interaction between

[25] A measure of how economically resources/inputs (funds, expertise, time, etc.) were converted to results.

facilitators and participants through the online component of these courses over a more prolonged period gives the facilitators valuable feedback they can use to help shape the face-to-face portion of the course more effectively as well as ensures a greater exchange of experience among the participants. The latter also enhances the learning process as well as strengthens the likelihood that participants will form a network that continues after the course is completed.

One Activity Manager also noted that sometimes one starts out developing a course that turns into a project over time. Their thinking on this situation was that it would be better to design it as a project from the beginning in terms of time and resource efficiencies and not use the ad hoc approach that arises within a shorter funding time frame and modality. They observed that a three-year time span would be more efficient in this regard.

Most of the Activity Managers interviewed considered how their courses/learning activities are funded to be a cost efficiency issue as exemplified by the example above. Another example in this regard cited was that 60% of ILSGEN resources come from participant fees. To remain competitive and ensure particpation, it is necessary to limit the course fees. This often makes it difficult for ILSGEN to reach out for additional human resources. In addition, their constituency base is often wider than that of other technical programme areas as they need to provide services to Gender Ministries amongst others and not just Ministries of Labour. There is also a need to ensure that most of their courses serve all regions. The challenge related to efficiency was summarized by one Activity Manager as follows:

> "Even if by mandate you have to serve certain regions, etc. and even if you think some services are more needed than another but if this programme does not match the resources available, you have to compromise… so that we are living in a tension between what we have to do and what we can do."

Several Activity Managers noted that the need to mobilize a lot of resources has meant having to open courses beyond ILO's traditional constituents in order to fill training seats. However, they saw this was a benefit to the ILO's tripartite constituents since it exposed them to new networks and ways of thinking. As such, that provides an argument that this approach in some ways represents a more efficient use of resources.

Findings Summary – Efficiency of Resource Use: Question 6

- The level of both immediate results and extent of upscaled or replicated results represents quite a high rate of return for learning activities and even more so for activities related to the promotion of gender equality.
- The use of blended on-line and face-to-face courses run within the context of a technical cooperation project or with a longer term partner where there are project or partner personnel in the countries where the participants are concentrated was considered to be the most efficient use of learning activity resources.
- For open courses, learning activities that provided cross-fertilization of experiences and sectors across different regions and sectors were also considered to be an efficient use of resources.
- Where the thematic area permits, for targeted courses, holding them in the region or country where the participants are concentrated made the learning activities both more accessible and less expensive and therefore was a more efficient approach.

2.5 Effectiveness of Management Arrangements[26]

The following section has combined evaluation questions 7 and 9 since there was considerable overlap in the data used to answer these two questions.

EQ 7: Were the roles and responsibilities of Centre officials, including program management, who were responsible for the implementation of the activities clearly defined and understood?
EQ 9: Were the activities coordinated across technical programmes?

The evaluation asked Activity Managers, partners and other stakeholders if their respective roles and responsibilities for the projects/courses on which they collaborated were clearly defined and understood. From an internal perspective, all Activity Managers interviewed reported there was a clear understanding of roles and responsibilities among team members. This was particularly the case for the development of non-ILSGEN courses which called upon ILSGEN staff expertise. Activity Managers saw this collaboration very positively, with one speaking of acting as a team on multiple projects and noting that they were always learning something new about effective ways to integrate gender into different courses.

For courses where there were external partners, there was also very positive feedback about the collaborative experience, with one external key informant noting that *" Our roles were very clear. So were our interests. The interests precede the roles [and] our respective roles were clearly spelled out in the related project proposal*". Another Activity Manager observed that her team relied upon the specialized expertise of the partner organization and were very impressed by this person's expertise. Having access to this expertise was, in fact, the reason they wanted to partner with this particular external partner.

The Centre's partnership with UN Women was considered quite positively by all concerned. The two organizations have a Memorandum of Understanding (MOU) that clearly outlines which learning activities would be organized jointly. It was also clear how each partner could highlight the other's strengths and bring their own assets and reputations to help generate a significant result. Activity Managers also highly valued UN Women's expertise in several learning activities, with two indicating that they would really like to develop a closer relationship with UN Women so that they could benefit further from UN Women's expertise in the area of women's economic empowerment.

The Centre's relationship and collaboration with the ILO's Gender Equality and Diversity Branch, has ebbed and flowed over the past ten years, with it sometimes being a fairly close relationship and sometimes less active. Much has depended on the relationship with the Director of the Branch. However, what has worked well in the past has been the holding of an annual planning meeting between the ILSGEN Chief and the ILO Gender Equality and Diversity Branch Chief to discuss what each organization has on its agenda for the year and in which areas they could

[26] The extent to which management capacities and arrangements put in place supported the achievement of results.

cooperate and support each other. This form of collaboration diminished considerably in the past two years, but is currently being revived..

When the two units have collaborated, the ILO has provided feedback and comments on gender-related course outlines, some experts to give master classes in the Gender Academy, as well as financial support for this event, and assistance in the facilitation of some on-line courses. In the past, the ILO also used to hold its annual inter-regional learning forum in Turin for their Gender Focal Points, Gender Coordinators and Gender Specialists in Turin and the Centre would support this with their trainers and facilities. However, in the last six years the ILO has moved this event to the regions.

The Gender Equality and Diversity Branch is currently managing three regional technical assistance projects through the ILO field offices. Since they are regionally-based, it is up to the field staff to decide whether they will use the services of the Centre for any related training. The challenge is that Turin-based training is perceived to be quite expensive and that there are also higher costs involved in bringing the Centre's staff to the regions to do training. Overall, however, there remain multiple areas where the two units could continue to collaborate closely.

Coordination of Integration of Gender into Other Technical Program Activities

The evaluation survey asked if course flyers etc. included clearly statements regarding course gender objectives or content. While 15.5% of respondents could not remember, 82.2 (74) respondents indicated the gender-related objectives or content were clear in course flyers and outlines in the courses surveyed. The four non-ILSGEN courses selected had a fairly strong gender content. One Activity Manager noted that at first participants thought that gender was only about women but were open to looking at this issue from a different and more inclusive perspective. Activity Managers also indicated a need to introduce gender issues into different themes step-by-step. Over time, some courses offered on an annual or bi-annual basis to ILO constituents are steadily integrating stronger gender content, e.g. gender issues related to social protection, wages and collective bargaining.

Activity Managers and stakeholders interviewed for the non-ILSGEN courses also noted that gender was integrated into their courses in the following ways:

- By expressly targeting female participants from specific ILO constituent groups
- Including explicit modules on gender equality issues related to the course theme
- Including case studies that demonstrated methods for being gender-inclusive e.g. how to make a value chain inclusive of women and youth.

In addition, with one exception where the Activity Manager already had a strong gender background, the non-ILSGEN Activity Managers worked closely with ILSGEN personnel to help work out ways to integrate gender content into their course offerings. The Activity Managers concerned also demonstrated a good understanding of gender equality issues related to their technical areas and a willingness to learn what they did not yet know.

The evaluation also found that the non-ILSGEN courses selected for the evaluation sample represented a range of ILO constituents and technical programmes at the Centre. A review of the titles of the full list of ILSGEN courses and the non-ILSGEN courses that had a gender marker rating of 2 or 3 found that combined they touched on all but one of the Centre's technical programme areas. These included Employers' Activities; Employment Policy and Analysis; Enterprise, Microfinance and Local Development; Workers' Activities; International Labour

Standards and Rights at Work (particularly with regard to decent work), and Sustainable Development. It was not as obvious from the course list titles if the programme of Social Protection, Governance and Tripartism covered this area. However, an interview with one Activity Manager indicated that this programme was also working on integrating gender issues into courses related to social protection.

However, it was not possible with the data available to ascertain if the coordination of gender across all the technical programmes has been done evenly and to the same extent for all programmes. One challenge is that while there is a Gender Focal Point system in place, this is used more to keep Centre GFPs updated about current gender issues and has not been set up to serve as a mechanism for coordinating the integration of gender into specific technical programmes. The Gender Focal Points also do not meet frequently, with formal meetings being held just twice a year.

One Activity Manager also noted that when there is turnover among Centre staff that it can take up to a year to find out who the new personnel are in each technical program area. To some extent, staff turnover can act as a limitation on the degree to which gender is coordinated across all technical programs. This is as Activity Managers indicated that this coordination takes place mainly through the personal professional relationships that develop between ILSGEN Activity Managers and those in the other technical areas as opposed to through formal mechanisms such as Gender Focal Point meetings. Currently the primary ILSGEN Activity Manager responsible for helping coordinate the integration of gender into other technical programmes areas dedicates approximately two full time work months a year to this task.

Activity Managers from other technical areas also indicated that it is widely understood that the Centre is committed to the integration of gender equality as an issue within its programming. The evaluation also found that those interviewed all demonstrated a strong commitment to the promotion of this issue within their work areas. Senior management was also cited as having acted as a leader in this area by several Activity Managers.

Several Activity Managers across the different technical programme areas noted that there used to be a peer review committee in place that included gender equality as a standard review category. It had a fairly loose membership but in general always included someone from ILSGEN, a staff member from the Distance Learning unit on learning methodologies, the Director of Training, with other programmes invited to participate on an ad hoc/interest basis. The activities submitted to the peer review committee were either new activities or those that a particular technical programme area requested be reviewed. This practice was discontinued approximately two years ago, but in the past facilitated both a gender review of new activities and created opportunities for more cooperation and coordination across technical areas. Several Activity Managers indicated that they had found this peer review process extremely useful.

EQ 8: Were the current arrangements for implementing the activities effective?

Table 13: Sufficiency of Information Received Prior to Course Implementation

Sufficient information provided	Male	Female	Grand Total	% of Total
Yes	20	49	69	88.5
No	4	5	9	11.5
Grand Total	**24**	**54**	**78**	**100**

The majority of participants surveyed indicated they had received sufficient information regarding logistics and course implementation arrangements prior to the course. Overall, the Activity Managers thought course implementation arrangements were well managed. Several also noted that this was particularly the case for blended courses where there was an opportunity to get to know the participants online and exchange with them prior to the face-to-face component. One noted they had encountered a problem with one of their translators not being that reliable and in targeted courses where participants were selected by the partner with course information not being passed onto the prospective partner in a timely way.

One course, "*Making markets more inclusive for women and youth to promote entrepreneurship and job creation in Kenya"* also was able to meet with the participants prior to the course starting to discuss both course implementation arrangements and get a better sense of their backgrounds and capacity. The course partners indicated that this approach had been particularly effective. This was confirmed in the end-of-course evaluation in which the two questions[27] related to management arrangements received scores of 4.79 and 4.64. Both these scores were higher than the Centre average of 4.37. In general, Activity Managers noted that courses which took place within the context of technical cooperation projects received additional logistical support from their partners and that their partners often had a more in-depth understanding of the participants' needs. This was particularly the case for training that took place within the country of the participants as opposed to in Turin.

Survey respondents (87) indicated that they found out about the course in the following ways:

- 34.5 % were invited by their employers
- 32.1% (22) either from the Centre website or a direct invitation from the Centre (6)
- 21.8% from colleagues or friends
- 6.9% through other means (newspaper, CSO website, the Burundi project)

This division shows that while word of mouth referrals are important, the Centre's own role in advertising the Centre's course offerings is still a very important factor in the outreach process.

Some courses also made use of social media as a tool to help with learning arrangements as well as to communicate course content. While the majority of the evaluation survey respondents skipped the questions on social media, of the 39 who did respond, SMS was cited as being used the most frequently, followed by Facebook and then Twitter to a very limited extent. One course also used What's Up. Of these, SMS was used most consistently (i.e. before, during and after the

[27] Would you say that the logistics of the activity were well organized?; Would you say that the administrative support/secretariat was efficient?

course) and Twitter not very much. However, 46% of those who responded indicated that social media was not used at any point during their learning activities. Where social media was used, 95% found that Facebook added value; 86% SMS and 80% Twitter.

Activity Managers thought they could make better use of social media in the courses, particularly of SMS. One noted that their unit used to use social media more, but that the staff person whose full time role that was no longer works there and that this position was eliminated. Consequently, they are now trying to fill in the gap with interns. That approach has its limitations as interns can often only stay in place for three months, leading to a degree of lack of continuity and a continuous need to train new interns. The issue is a more a question of the amount of time it takes to use social media systematically for a course (particularly those with online components) as opposed to being a lack of staff expertise. For some aspects of web-based platform management, however, some specialized knowledge is required.

Findings Summary – Effectiveness of Management Arrangements (Questions 7 & 9)

- The Centre generally does a good job of informing participants of logistical arrangements and course content prior to course implementation.
- The Centre does not make systematic use of social media as a tool to enhance learning. Where it does, it is seen to be effective by participants. It also appears to add to the achievement of learning results in the blended course options.
- The Centre has integrated gender into all technical programme areas, but it is not clear how evenly this has been done across the board, with some technical areas appearing to have more integrated courses than others.

2.6 Visions for the Future

The Centre has established a reputation for being a cutting-edge training institute with regard to gender and has developed a core group of courses and learning activities that have helped generate this reputation. Partners, stakeholders and Activity Managers indicated the following potential areas at which the Centre could look to continue this cutting-edge approach while still addressing the priority needs of the ILO constituents include:

1. Addressing discrimination and other issues affecting Lesbian, Gay, Bisexual and Transgender Workers, persons with disabilities and other excluded categories of workers.
2. Gender-related work issues in the UN's Sustainable Development Goals, including violence within the workplace, particularly gender-based violence
3. How to implement the new international labour standard Recommendation (June 2015) related to the transition from the informal to formal economy in a way that is gender-transformative
4. Work on the care economy leading up to the ILO focus on this issue for 2019 (potentially to be done in collaboration with UN Women which works substantially on this issue)
5. Specific issues related to UN System processes such as integrating gender into UNDAFs and reporting on the UN System Wide Action Plan (SWAP) on gender equality (potentially in collaboration with the UN System Staff College)
6. Work on gender and men and masculinities within the workplace and within ILO constituent organizations.

There are multiple ideas the Centre could pursue in the future to build upon the solid body of work in gender-related programming already established as well as address the need for the Centre to be more entrepreneurial due to funding realities. To do this, however, requires some time to be set aside for staff brainstorming and reflection. It will also likely require financial support from external partners. While some Activity Managers indicated that the funding approach for new course development is sometimes a bit ad hoc, the Centre does invest strategically in the development of new products and offerings to promote outreach of its services among women.

3. Conclusions

Relevance

The courses and other learning activities are both relevant and, for the most part, quite effective. They represent a blend of the Centre's more traditional approaches to work with ILO constituents combined with treatment of cutting-edge themes that attract a wider audience or which help ILO constituents apply innovative ways to integrate gender into their work. The way the courses and learning activities have been set up address the commitments made in the *ILO Action Plan for Gender Equality 2010-2015, the Centre's Strategic Plan and its Gender Result-Based Action Plan 2012-15* and the corresponding four programmes quite solidly. However, while it is apparent that the Centre is addressing gender within all its technical programme areas, it was not clear from the data available how evenly or to what extent this has been done across all technical programme areas, with some addressing the issue quite extensively and others to a more limited degree. This area of assessment therefore needs further exploration and review.

The Centre's learning activities related to gender equality are reaching all ILO's constituents as well as a growing group of CSOs, academics and other UN agencies. Interaction among this wider audience is beneficial for all the sectors concerned. The Centre has also been successful in achieving high rates of female participation in its gender-focused or integrated courses, but not in increasing these rates of participation in all of the Centre's other learning activities. It has a high rate (relatively speaking) of male participation in most but not all gender-related courses. There may thus be a need for additional outreach to ensure that men are adequately represented in some specific courses. It also appears that the Centre is not reaching people with disabilities to the degree in which they are represented in the population or labour force.

Learning Activity Results and Effectiveness

The overall results arising from the Centre's approach to gender within its learning activities have been quite positive and significant in multiple areas for all ILO constituents, with 62.1% of evaluation survey respondents indicating concrete results. Many of these they believe to be sustainable and provided concrete evidence that this was the case. It was also possible to document that at least half of the evaluation learning activity sample had generated results that have already been replicated or scaled up despite these courses or learning activities only having been completed within the past year and a half. This also represents a significant outcome.

The level of both immediate results and extent of upscaled or replicated results also represents quite a high rate of return for learning activities - even more so for activities related to the

promotion of gender equality which typically require a long time to effect visible and significant change. The most cost efficient learning modality combines on-line and face-to-face courses run within the context of a technical cooperation project or with a longer-term partner. This is particularly the case where there are project or partner personnel in the countries where the participants are concentrated. Where possible, it was also cost efficient to hold courses in the country or region of the target audience.

Validity of Activity Design

Learning activities are generally well designed from a logic perspective but sometimes try to include too much material in a short time period. With this exception, course learning objectives are realistic. This is reflected consistently in the high level of post-course results as well as in the end-of-course evaluations.

The course evaluations allow for a consistent comparison of course and learning quality across the board, but not for the documentation or tracking of specific course results. They can only accurately track course results to a limited degree (i.e. did the course achieve its objectives) as questions about future results can only be speculative in nature. Some final reports for courses are also incomplete and do not include the results of end-of-course evaluations or an analysis of the strengths and weaknesses of the course. The follow-up evaluations are also not conducted systematically across the board (it was not clear if there are the resources to do this). While course participants found the course evaluations to be an effective means of measuring results, Activity Managers find the gender question to be unclear. As a result, it generates rather mixed results which Activity Managers do not think necessarily reflect the actual treatment of gender within course material.

Follow-up evaluations are generally well designed (although a bit generic in nature) but are not conducted systematically for all courses. This limits the degree to which the Centre can document and track longer-term results. This also limits the degree to which Activity Managers are aware of, or are able to track, post-course results and use these to strengthen future programming or provide additional technical support to past participants.

Efficiency of Use of Resources

The level of both immediate results and extent of upscaled or replicated results represents quite a high rate of return for learning activities and even more so for activities related to the promotion of gender equality. Overall, the use of blended on-line and face-to-face courses run within the context of a technical cooperation project or with a longer-term partner where there are project or partner personnel in the countries where the participants are concentrated was the most efficient use of learning activity resources. Where the thematic area permits, for targeted courses, holding them in the region or country where the participants are concentrated made the learning activities both more accessible and less expensive and therefore was a more efficient approach.

Management Arrangements

While the Centre has integrated gender into all technical programme areas, it is not clear how evenly this has been done across the board, with some technical areas appearing to have more gender-integrated courses than others. There is also no longer any formal system in place to ensure that this gender integration takes place. The Network of Gender Focal Points is not set up to fulfil this function, but rather to discuss new trends within gender equality and the Centre

could benefit from the reinstatement of its peer review process or other kind of cross programme review system which could be used as a tool to ensure a more systematic integration of gender into other technical programme areas.

Summary
The Centre generally does a good job of informing participants of logistical arrangements and course content prior to course implementation and has effective management arrangements in place. However, it does not make systematic use of social media as a tool to enhance learning. Where it does, it is seen to be effective by participants and appears to add to the achievement of learning results in the blended course options.

To sum up the Centre's approach to the gender equality thematic area is serving ILO constituents well, has done a good job of attracting the participation and experience of other sectors, and is generating a high level of both immediate and longer-term results. Outstanding concerns are that Activity Managers do not yet have access to a systematic means for tracking course or learning activity results and that there still remains a significant minority of course participants who do not feel they can apply the skills and knowledge they learned related to gender effectively. Overall, however, the Centre's reputation as a cutting-edge training institution with regard to gender is merited and its overall approach to this thematic area is highly relevant and well implemented.

3.2 Lessons Learned

The key lessons learned from the evaluation findings are as follows:

1. To maintain relevance within the gender equality area while still being cost effective, the Centre needs to continue to reach out to groups and sectors beyond the traditional ILO tripartite constituents. Indeed, the inclusion of these other groups and sectors as target audiences is serving to provide ILO constituents with increased learning and opportunities by exposing them to more diverse gender networks and shared experiences at a national, regional and global level.

2. Strategic partnerships such as those with UN Women not only expand the reach of the Centre's learning activities but also often serve to reinforce course results and are generally a cost effective way to deliver training. They allow for greater access to specialized expertise and a diverse target audience as well as a sharing of the workload .

3. The success of the technical support approach used with the GENIS Lab project showcased the effectiveness of a longer-term approach where much of the learning takes place outside of the classroom in an applied learning setting. It also demonstrated the strength of the ILO Participatory Gender Audit methodology. Funding permitting, it would be worth the Centre exploring where else they might apply this kind of learning approach.

4. End-of-course and follow-up evaluations are insufficient tools to track the significant and very concrete results of the Centre's learning activities related to gender equality. It

may be that a greater use of social media to help establish and maintain networking among course participants could serve to both reinforce results stemming from learning as well as provide a more systematic conduit for Activity Managers to obtain feedback about course results in the intermediate and longer term.

5. To coordinate the integration of gender equality across all technical programmes in a systematic way requires a formal mechanism to do so as opposed to relying primarily on the interest of individual Activity Managers and goodwill and availability of inputs from ILSGEN staff.

6. Although blended courses are more expensive since they are longer in length and require additional resources to develop and deliver, they appear to be more cost effective as they attract more committed learners and provide more opportunities to interact with participants. Both these factors increase the likelihood of the blended gender-focussed or integrated courses offered having significant results following course completion.

4. Recommendations

Based on the evaluation findings, the evaluation recommends the following actions to address gaps identified in each evaluation category.

A. Activity Relevance and Outreach

1. The Centre should set and track concrete targets for male participation in gender-focused courses or learning activities.
2. The Centre should add a category in its application forms and course evaluations to allow participants to self-identify as having a disability, being from an ethnic or other minority, and by age. This would allow the Centre to track if the degree of their participation in the Centre's learning activities is proportionate to their representation in the population or among constituents so that if it is not, additional outreach to these groups can be added.
3. Future progress reports should include an analysis of female participation rates by technical programme area and not just as a Centre average. This will help the Centre determine if it is actually meeting its female participation targets in each area.

B. Validity of Course Design

4. The Centre could consider revising its end-of-course evaluations to include a question or questions on specific results tailored for each course or learning activity.
5. The question on gender needs to be revised for greater clarity. One possibility is to divide the question into two, e.g. "How well did the course address the specific needs of both women and men within the course's sector or theme?" and "To what extent did this course/learning activity give you any tools, skills or knowledge to address gender equality in the sector in which you work?" A variation on this latter question should also be included in the follow-up evaluation format.
6. Final reports on courses should always include the end-of-course evaluation results and a response and analysis of these results.

7. To the extent that the Centre budget and staff time permits, it should increase the number of follow-up evaluations conducted so that this is done more systematically for each technical programme area.

C. Effectiveness

8. There is a need for Activity Managers to review each gender-focused or integrated course to determine how to increase the number/percentage of participants who feel they have sufficient skills, confidence and knowledge following course completion to be able to apply these to affect positive change related to gender equality within the organization or sector in which they work. The actions needed may be different for each course that is the reason there is a need for a course-by-course review.
9. The Centre should find ways to showcase the success and results of their gender-focused and integrated courses and learning activities in public fora and among its constituents to both provide recognition of the high quality work its staff are doing and as a means to promote increased participation in the Centre's related course offerings in the future.

D. Activity Impact Orientation

10. The Centre should consider if it is possible to make greater use of social media as a means for Activity Managers to track the longer-term gender impact of its courses more systematically. Social media could also be used to help facilitate networks among course participants since this will also reinforce course results. This will also depend upon the resources available, but it may be possible to establish a partnership with the private sector as a potential donor to provide these services for some courses.

E. Efficiency of Use of Resources

11. The Centre should consider reinstating the course/learning activity peer review system to both enhance a systematic review of gender integration across all technical areas as well as foster increased communication across technical program areas regarding on what projects and courses each area is working. An alternative is to review the Gender Focal Point Network to enable it to take on this gender integration role. That, however, would require that additional resources be allocated to support the increased coordination of this network by ILSGEN.

Case Study

Technical Support for Gender Mainstreaming to the GENIS Lab Project: the case of the Institute of Nuclear Physics

The ILSGEN Unit of the ITC-ILO (Centre) provided ongoing technical assistance and support to GENIS LAB project funded by the European Commission (www.genislab-fp7.eu). This project worked on overcoming factors that limit the participation of women in research and sought to implement structural changes to achieve this end. The project worked with six scientific organizations operating within the European Union. These included:

- CSIC - (Spanish Higher Council for Scientific Research)
- Institute for Polymer Science and Technology, Spain
- Leibniz Institute of Polymer Research (IPF) - Dresden, Germany
- Faculty of Technology and Metallurgy (FTM UB) - University of Belgrade, Serbia;
- National Institute of Chemistry (NIC), Slovenia
- Blekinge Institute of Technology (BTH), Sweden.
- National Institute for Nuclear Physics (INFN), Italy

The project ran for four years from 2011 to 2014. In addition to the Centre two other technical partners provided support to the scientific institutions involved: Foundation Giacomo Brodolini, and the Association of Women and Science. The Centre had technical leadership for the first phase of the project. The objectives of the project were to:

1. Improve women researchers' working conditions
2. Improve women researchers' career opportunities in research organizations
3. Improve the organizational climate – workplace, acting on organizational culture, to fight against negative stereotypes within the research organization
4. Contribute to the creation of a culture, in which both women and men experience that their individual interests and intellectual assets are taken into consideration and acknowledged as qualitative values in the institution's development.

This case study provides an overview and analysis of the work the Centre with INFN did through its ILSGEN Unit under the auspices of the GENIS Lab project. Within the INFN the project was coordinated through its Training Department. The methodology used for this case study was to conduct a series of in-depth key informant interviews with key INFN personnel involved in the project. This included a group interview with the Project Committee responsible for the project's implementation as well as follow-up interviews with some Committee members, plus interviews with INFN senior management. The evaluation interviewed a total of seven persons over a two day period in late June 2015. The INFN also provided the evaluation with extensive documentation on the GENIS lab process, activities and results for review.

INFN

The INFN is a scientific research organization that is:

> "dedicated to the study of the fundamental constituents of matter, and conducts theoretical and experimental research in the fields of sub-nuclear, nuclear, and astro-

particle physics. Fundamental research in these areas requires the use of cutting-edge technologies and instrumentation, which the INFN develops both in its own laboratories and in collaboration with the world of industry. These activities are conducted in close collaboration with the international scientific community." (ITC-ILO: 2011: p 7)

The Institute has four laboratories with a large physical and equipment infrastructure and equipment that is spread out across 20+ Divisions[28] and in 28 locations. Many of these are located in the Department of Physics in universities across Italy. Its head office is in Frascati, a small town 30 minutes from Rome that hosts several different and quite reknowned research organizations. The Institute has approximately 2100 staff. It is governed mainly through a Council of Directors that includes the President, Executive Board, Directors of the four national laboratories and 20 divisionsand representatives from other institutions.

Context: Women and Science in Europe

ITC-ILO's 2011 report on the Gender-Based Organizational Assessment of the INFN observes that women's academic careers across the EU region are still characterized by considerable vertical segregation in all disciplines. In particular, while the proportion of female students (55%) and graduates (59%) exceed that of male students, at the PhD level their representation falls significantlyl to 48% of the student body and just 45% of PhD graduates. Women also represent only 44% of grade C academic staff, 36% of grade B academic staff and 18% of grade A academic staff (grade levels referring to the types of contracts they hold and tenured positions within academic institutions). These gaps are even more pronounced in the scientific research area.[29]

The 2011 report also noted that some common reasons for this include the relatively late entry of women in a number of scientific fields, including Physics; and that women either drop out of the scientific research area during their reproductive years or have longer career breaks than men due to child-bearing. This has an immediate impact on their scientific productivity, particularly given that much initial scientific innovation takes place prior to the age of 30. These explanations focus on external societal reasons that help reduce the competitiveness of some women within the science arena. However, the report also notes that measures to address these underlying causes, such as increasing access to childcare, have not been sufficient to counterbalance women's loss of productivity during maternity leave. Additional studies in the region have found that:

1. Despite growing female educational attainments over the last 30 years, women continue to be under-represented at higher levels of research and academic careers.
2. While women researchers are equally competent, committed and ready to "take risks" as their male colleagues, they still have a lower probability to attain more senior positions.
3. Even women researchers with dramatically low fertility rates tend to have a "slower" career progression than men, even when they do not take longer career breaks for family or other reasons than their male peers. [30]

[28] The number of divisions is somewhat fluid depending upon funding availability.

[29] GENIS Lab. 2011. INFN Trieste Report – Gender-Based Organizational Assessment. Turin: ITC-ILO. P. 5-6

[30] ITC-ILO. 2011. GENIS Lab/INFN Trieste Report – Gender-Based Organizational Assessment. Turin: ITC-ILO. P. 5-6

What both the Centre report and interviews with INFN personnel noted is that another cause of the problem is unintentional bias within the evaluation culture in scientific institutions. While the science world is supposed to be based on merit and research achievements, it is also a highly competitive environment in which to work. Key factors for success include being able to work long hours, travel abroad on a regular basis, sacrifice family time, and work under precarious working arrangements.[31] In addition, from a sociological perspective there is a tendency for existing decision-makers (in this case predominantly senior males) to reward and select those most like themselves (i.e., other older males) without being at all aware that there might be a bias in their selection process.[32] The Centre report notes that,

> "*informal working practices and networks, unspoken assumptions and internal cultural biases can make scientific research "unfriendly" to women, as they tend to replicate existing power relations in an historically male dominated environment."* (GENIS Lab: 2011, p. 7)

The INFN Process and History

Given this context, INFN considers gender and equal opportunity to be important issues. One member of the INFN GENIS Lab committee is a female high energy theoretical physicist of long standing. She is also a member of the Women and Science Association. The President of this Association asked if the INFN would like to participate in the EU-funded project. The physicist in question contacted four to five other INFN professional staff she thought might be interested in this possibility. This group was subsequently able to convince INFN's top management to sign an agreement for the INFN to participate in the project.

Initially the project was discussed and managed through INFN's Gender Equality Committee (coordinated by INFN's Director of Training who also served as the Institute's GENIS Lab coordinator). At the end of 2011 the Italian Government revised its law governing institutional Equal Opportunity Committees (CUG)[33] to expand their mandate from gender equality to include a broader range of equal opportunity and diversity issues. This increased the committee within INFN to 20 members, including union representatives. This increased size made the CUG an unwieldy body in which to develop new ideas and activities and make decisions on related issues. As one INFN staff member put it, "there were 20 members and 21 ideas". As a result, the initial group that had introduced the GENIS Lab project to INFN decided to work on its own in a much smaller Project Committee and received authority to do so from senior management.

This Project Committee was headed by INFN's Director of Training and consisted of an additional three members, the aforementioned high energy theoretical physicist, a work psychologist, and an experimental physicist who also serves as the Training Educational Transfer Manager for the Frascati Labs. As a part of their modus operandi they made a point of informing the Institute's Executive Committee of every step they took and progress made. This helped involve senior management throughout the project's implementation. In addition, one Executive Committee

[31] GENIS Lab. 2011. INFN Trieste Report – Gender-Based Organizational Assessment. Turin: ITC-ILO. P. 7.

[32] Interviews, INFN research and HR staff. Frascati, June 29-30, 2015.

[33] Comitato Unico di Garanzia

Board member had the overall responsibility for supervising the GENIS Lab project within INFN. This served to give the project committee a voice at a very senior level.

The GENIS Lab project had three main areas of activity: gender budgeting, Human Resource issues, and organizational stereotypes and gender equality issues. Each activity area was led by one of the project's three technical partners. The Centre led the assessment of Human Resources Management, although of necessity there was some overlap in this process with the other two areas at the analytical level.

GENIS Lab's first major action was to conduct a Participatory Gender Audit (PGA) during the first nine months of the project for all six research institutions. Through the EU project INFN was able to share its report and experience with the other five research institutions as well as learn from their experiences, all using the same PGA methodology. Once completed, the PGA report served to underline INFN's strengths and weaknesses with regard to career advancement for women scientists as well as other gender issues affecting staff. It also included recommendations to address the key problems identified.

Based on PGA results the Project Committee, with the support of a gender specialist and technical advisor from the Centre, were able to convince the Human Resources Director and INFN's senior management to pilot the development of a competency-based job assessment system. The aim was to move to a more merit-based process that would help reduce or eliminate unintentional bias within INFN's evaluation system. By the time the project ended, INFN's top management had agreed to apply the competency-based job assessment system in all 28 locations.

The Committee also used the PGA recommendations, the insights they gained from the PGA process and their own knowledge of INFN's institutional culture to develop a self-reported action plan with clear targets, activities, timelines for implementation, performance indicators and the resources required for their implementation. The INFN refers to this action plan as a Tailored Action Plan (TAP). The TAP was set up to combine a systemic approach for taking specific actions on each dimension of the project. The Centre's technical advisor helped the Project Committee apply different approaches and tools to refine and develop the best alternatives for related actions for the Institute. She also provided considerable technical support in the drafting of the TAP, which the Project Committee described as a very complex and challenging process that required a considerable expenditure of resources.

In addition, the GENIS Lab project organized two courses on Change management and Gender Balance. These were offered at the national level for staff from all six research institutes involved in the project. These training courses were co-facilitated by the Centre's technical advisor. The Centre's technical advisor/activity manager also facilitated training on change management using a competency-based staff assessment system that staff from Frascati and other INFN sections and laboratories attended. Senior management reported that both these trainings were very important in terms of increasing staff awareness and skills levels related to institutional gender mainstreaming and competency-based staff assessment systems.

The Participatory Gender Audit Process with INFN

The PGA organized as one of the first steps to support the INFN through the GENIS Lab project

was based on ILO's well-established institutional gender audit methodology. The INFN decided to conduct its PGA using a representative sampling method. It selected its Trieste location for this purpose as it was representative of the organization as whole. This is as it included personnel from all staff categories, with 49 permanent and 5 non-permanent staff and approximately 215 associated staff from the Trieste University Department of Physics, and other related research institutions.[34] Its Director was also quite supportive of the PGA process.[35]

PGA findings were collected through:

- A preparatory phase, where ITC/ILO and FGB visited the INFN Frascati Headquarters to collect data and discuss modalities of implementation. (21 March 2011)
- A desk review of selected documents and statistical data (see list in Annex)
- An on-line survey disseminated among Trieste staff, which included responses from 44 INFN staff and 22 University associates (16 women and 49 men + one non declared).
- A field visit to Trieste from 28 to 31 March, 2011 where INFN staff were engaged in 24 confidential individual interviews and 2 participatory workshops. [36]

Situation of Women Scientists within the INFN

The INFN's 2013 Integrated Tailored Action Plan on gender equality summarizes the situation for women scientists and other female staff which the PGA. A slightly modified excerpt from the TAP follows and summarizes the PGA's key findings. It is presented below in considerable detail to document both what PGA was able to bring to INFN in terms of additional knowledge about how their institution operates from a gender perspective and to provide a basis of comparison for the changes which followed this assessment.

Women's Representation in INFN

1. In 2011, women represented about 24% of all INFN staff holding permanent contracts. The percentage lowered to 15% in scientific, technological and technical positions.
2. Women's presence in governing bodies and other decision making positions was also quite low: with no women represented at the Executive Board level[37] and the Council of Directors having only 3 women out of 31 members (10%). These included two Directors of Section and one Director of Laboratory (out of 20 Sections and 4 National Laboratories.
3. The Italian Ministry of Research and Education had reported that over the last 20 years women have consistently represented 30% or more of those who have completed a PhD in Physics in Italy. A review of recruitment and career trends over the years 2003 - 2010 made by INFN's Equal Opportunity Committee found that within INFN:
    a. There has been a decrease in recruitment of women researchers in indeterminate positions. While this trend needed to be considered within the context of there having been a dramatic decrease in new positions overall, this decrease was less dramatic for male researchers. There was, however, a relative improvement in 2010, when 37 new

[34] GENIS Lab. 2011. INFN Trieste Report – Gender-Based Organizational Assessment. Turin: ITC-ILO. P. 13.

[35] GENIS Lab. 2011. INFN Trieste Report – Gender-Based Organizational Assessment. Turin: ITC-ILO. P. 7

[36] GENIS Lab. 2011. INFN Trieste Report – Gender-Based Organizational Assessment. Turin: ITC-ILO. P. 4

[37] Currently one woman is now represented in the INFN Board (Giunta Esecutiva) and serves as Vice President.

positions opened at national level through a public competitive process, with women representing 10 of 37 new recruits (27%) and 26% of eligible applicants.

b. An improvement in the "disparity index" (no. of men/no. of women) among Heads of Research (from 13 to 8 males for each female Head of Research). This still brought the total to just 14 female Heads of Research out of 116 at the national level.
c. Gender disparities are more pronounced among younger age groups and among permanent staff, with women comprising only 21.8% of researchers in the age range 35-39; 19% of those between 40-44; and 24.8% of those between 45-50.
d. Young researchers of both sexes remain concentrated in non-permanent positions, and women make up 29% the researchers holding non-permanent positions.
e. Women have lower probabilities for career advancement and require longer time frames to advance, e.g., a 45-year old woman has half the chance of being promoted to Head of Research than a male colleague of the same age.[38]

The TAP also noted the following breakdown of male/female within INFN's professional categories of work:

a. Among technologists (engineers, IT specialists, lawyers) women represented four of 33 positions.
b. 5.4% of technicians were women
c. In administration and general management 82.7% of the positions were held by women but they were rarely in decision making positions
d. Four out of seven prizes for best doctoral thesis in 2010 were awarded to female scientists.[39]

The PGA's other key findings with INFN were that:

Gender Equality Policies and Structures

- Under Italian law the INFN had to establish a bipartite Equality Committee. There is also an external equal opportunity advisor.
- INFN has a Code of Conduct and a formally approved "Equal Opportunity Plan". However, many staff were not familiar with these mechanisms.
- At the time of the audit the Plan had no measurable targets nor accountability mechanisms. However, it had helped contribute to implementation of diverse training, data collection and analysis and sensitization activities.
- Given INFN's large size and decentralised organization the Equal Opportunity Committee finds it hard to be visible among the majority of staff – despite the fact that Committee members are drawn from INFN's different Labs and Sections, and professional categories.
- Statutory requirements for female quotas in evaluation committees for public competitions exist, when strictly required by law. Discussions are ongoing between the Equal Opportunity Committee and the Executive Committee to try and extend this provision beyond the legal requirements (e.g. to all committees).[40]

Organisational Culture

[38] INFN. 2013. Integrated Tailored Action Plan. Frascati: INFN. P. 4.

[39] INFN. 2013. Integrated Tailored Action Plan. Frascati: INFN. P. 4.

[40] Excerpt adapted from: INFN. 2013. Integrated Tailored Action Plan. Frascati: INFN. P. 5.

- At the organisational level INFN did not seem to take an institutional proactive stand on the importance of equality for the achievement of its organisational mission.
- There was a low level of individual knowledge of existing policies, institutional mechanisms and tools on equality and sexual harassment.
- While no prejudices about women's technical abilities were recorded, opinions were more nuanced on what is expected from women and men when they attain leadership positions, with leadership often being unconsciously related to male behaviours and symbols. Women as leaders also tended to be judged as "women AND leaders" as if this was an inherent dichotomy while this perception was not the case for men.
- There are possible contradictions between the growing need for collaborative behaviours and methods (particularly in large international research projects), and the need to compete to have successful careers in nuclear physics research.
- INFN staff often described scientific research as the "domain of meritocracy" and as being "gender-neutral". However PGA discussions would often lead respondents to conclude or remark that the "theory" does not always translate in actual practice, with the apparent neutrality of science being socially "conditioned" by human factors and that this was where gender bias could inadvertently occur.
- There is a consistent use of masculine gender terminology throughout all INFN documents at both the National and Section levels. This was perceived to express neutrality.
- The Trieste University has a specific policy to attract more young people and young girls into Physics. However, no specific thought had been given as to how to retain them and ensure they have a satisfactory careers.[41]

Human Resource Procedures and Policies

- Existing Human Resource procedures were rated as being sufficiently transparent and free from gender bias. However the Institute's actual capacity to translate the principle of equality into practice was rated as barely sufficient by the majority of the staff who replied to the PGA.s on-line survey.
- The INFN has officially adopted the EU Charter for Researchers and Minerva Code. The latter was introduced as part of INFN's new Staff Regulations but the Instittute is currently awaiting formal approval of these by the relevant Ministries. When approved, this would mean that, for example, it would be required to publish CVs of evaluation committee members and all candidates.
- INFN projects are normally large-scale and involve management of large international teams. However, no specific measures were in place to support the development of specific team management/conflict management skills. Instead the focus is solely on research skills.
- INFN staff have not yet engaged in a discussion on the potential biases involved in evaluation of excellence/performance and the obstacles to gender equality hidden in the accepted social representation of science. Many researchers and other staff noted, however, that traditional gender roles and cultural biases seem to influence women's careers fairly strongly.
- Internal performance evaluation is perceived as a rather mechanical exercise since professional profiles were not competency based.[42]

[41] Excerpt adapted from: INFN. 2013. Integrated Tailored Action Plan. Frascati: INFN. P. 5.

[42] Excerpt adapted from: INFN. 2013. Integrated Tailored Action Plan. Frascati: INFN. P. 5.

Work–life balance

- INFN has set up measures to support employees with children at a decentralised level and uses a central monitoring system exists to measure user satisfaction. However, no measures are in place to support dual career couples or to promote the idea that childcare is not only a women's issue. Consequently, the main beneficiaries of these services appear to have been women in administrative positions. Young female researchers expressed the feeling of still having to choose between having children and a scientific career.
- In addition, extrapolating from the staff experience in Trieste, it would appear that working conditions, the work culture in INFN, and times/location of local childcare infrastructure all made it difficult for researchers to reconcile research with family life, with women being the ones who most frequently have to make a choice between family and career.[43]

Additional Gender Equality Issues Identified

Given high competition levels competition within scientific research, the Committee observed there is not much collaboration among some women scientists and that they are very competitive, especially at the top levels. Those who do well have fewer children. This is not the case for whom having a family often appears to help their careers. The Committee was able track this pattern on a statistical basis. It also became clear that for women researchers to succeed they had to have a supportive spouse, and if their spouse was also a researcher who understood the career demands of scientific research that was even better.

Committee members also noted the scientific community has an evaluation culture that affects research funding and people's careers significantly. Most stereotypes that influence this evaluation culture are unintentional. Where this has been particularly important has been in peer reviews of research proposals and work. They observed that peer review is a form of democratic process and needs to be based on a clear concept of what constitutes excellence. The experience of the Committee members has been that the less transparent this definition is, the more likely men are to be chosen over women. For example, recommendation letters tend to praise men more than those for women, e.g., being more likely to cite men as geniuses.

In addition, men have greater access to informal decision-making processes where some of these selection decisions are made. Other factors at play include a recent practice adopted in the peer review system to use the number of publication citations as an achievement indicator. The Committee noted that some research groups cite each other regularly and that if you take part in a research group that has power, then your work will be cited. It is difficult, however, to gain entry to these research groups, particularly for women scientists. This further limits their ability to gain points within the citation indicator category.

Through the gender budgeting exercise the INFN did through the GENIS Lab project, the INFN also found that research groups with the least number of women spent the largest amount of the Institute's budget. The funds spent also correlated to the type of experiments being conducted, with women applying for smaller grants that require less equipment. There are also few women working in theoretical physics, with more women concentrated in nuclear experimental physics as opposed to fundamental high energy particle physics. The latter

[43] Excerpt adapted from: INFN. 2013. Integrated Tailored Action Plan. Frascati: INFN. P. 6.

requires more equipment and money to support related experiments. The Committee also documented that women represented just 6% of national research leaders, and 18% of local leaders although women researchers at the INFN represent 22% of the Institute's researchers.

One Committee member also observed that there is a problem of power and the relationship of women within power structures. There is a general perception that women do not want to have power but rather prefer to take a caring role and "just want to do their jobs". They are not perceived as having the same ambition as men – even though this is not the case for many women scientists. For some, however, this is a reality and may have much to do with how girls and boys are raised and societal expectations of their respective gender roles. It was also noted that women tend have more innovative approaches to research that are more holistic in nature and that these approaches are not always given the same credence as more traditional, linear research approaches commonly used by male researchers.

Competency-Based Job Assessment System Pilot

The Project Committee, with the technical advice of the Centre advisor decided that the most effective way to address some of the key issues identified through the PGA process was to pilot the development of a competency-based job assessment system in two INFN locations, Frascati and Trieste. The idea was to develop an institutional and systematic means of shifting to a more merit based assessment and job ratings system. The first step in this process was for the Committee to study how this was being done in the nuclear physics facility in Cern, Switzerland. The Director of that facility is a female Italian physicist who had formerly worked at the INFN, which also provided a strong role model for GENIS Lab project. Committee members went to Cern and interviewed management and HR personnel there with the assistance of the Centre advisor. Based on this feedback and additional input from the Centre on how to organize and analyze this information, the Committee developed a draft competency model for the INFN that could be used at all recruitment and job levels. The challenge was how to adapt the Cern Competency Model which had been designed for an organization with a much simpler structure to meet the needs of the INFN which encompasses four laboratories and 20+ sections and where, given the university linkages, not all recruitment management is under INFN's control.

The Committee decided to base the competency model on three areas: i) Core values; ii) Behavioural skills; and iii) Technical skills, using a self-assessment process to start. It took two months for them to construct the related self-assessment questionnaire. They used this questionnaire to interview staff in the two locations. They found there was some internal resistance initially as some staff were afraid this system would be used as a performance evaluation system. However, they were able to overcome this misperception and, despite the fact that participation was on a voluntary basis, there was an overall participation rate of 50%. To assist with this process, the Centre advisor came for a week to work with focus groups and interview INFN's top management.

Other GENIS Lab Project Results

> *"I learned that structural change is very important as only structural change can change the reality and practice." (Project Committee member)*

Others to which INFN staff at different levels indicated that the GENIS Lab project contributed include the following:

Figure 2: Types of Gender-Related Changes to Which the GENIS Lab Project Contributed

Awareness:	**Access to resources/opportunities:**
• There is increased knowledge about where gender inequalities are within the INFN, e.g., inequities in salary for women and men with the same levels of education and a need to address this through the collective framework. • INFN staff have learned that a budget is not neutral as how it is allocated shows how an institution distributes power. • Increased awareness among staff of what their real skills are, particularly with regard to their technical competencies but also an increased understanding of what are soft skills and their importance.	• On a very small Executive Committee for the first time there is a woman present. This has helped to bring renewed attention to the need to have women's representation on diverse committees. • There is also now a woman in charge of an INFN laboratory. • There is now a database of staff competencies INFN can use to identify staff to provide training in specific areas of expertise to support the Institute's proactive approach to training at both the internal and external levels.
Cultural norms:	**Policy and institutional change:**
• The notion of equal opportunity is now more widely accepted among staff, especially among top management. • There is less separation between staff and management and a greater sense of access to management by staff. • Human Resources was formerly viewed as an administrative function but can now become an important instrument for positive change within the INFN by making competencies more transparent and gender-friendly.	• The INFN has a tool to start a new way to manage people in a more objective way for both women and men. • There is an Action Plan in place with clear targets, activities outlined to achieve the stated results and performance indicators to measure their success. • In the 2015 provisional budget, the Project Committee has asked for funding to be divided more evenly between female/male scientists. This decision is still pending. • Staff identified some skills that had not been included in the self-assessment questionnaire. The assessment process was also set up so that staff could update it if they acquired a new skill or had upgraded their skill level. They could assign three levels of skill within any specific competency or knowledge area. • Specific job competencies are now completely transparent.

Project Committee members also spoke of learning new skills at an individual, professional level:

"I am a physicist – I did not study to be a trainer, but now I am responsible for a major training process."

Another spoke of learning new skills on how to effect institutional change, particularly related to gender equality. One Committee member also decided to participate in the Centre's 2011 Participatory Gender Audit certification course as a result of participating in the GENIS Lab project and is planning on using these new skills both within the Institute and externally after she retires.

Upscaling and Replication of Results

INFN staff interviewed indicated a number of areas where the project results are likely to be upscaled or replicated in the future. These include:

1. INFN will be applying the competency-based job assessment system to all of its laboratories, divisions and staff categories.

2. INFN funded a training session on diverse gender equality issues, particularly those arising from the PGA, for the members of the CUG and contracted the Centre to conduct this training. The course worked with the CUG members to analyze INFN from a gender an equal opportunity perspective. It also reviewed ways in which INFN could find sponsors from national ministries for further work in these areas.

3. One INFN researcher is currently developing a project on science education to help teachers build skills in teaching physics. He is using the GENIS Lab institutional study results to include a gender and physics component in the project design. The idea is to encourage young women's participation in science and to build their confidence to do so. He is currently applying for funding for this project and looking for a partner.

4. The INFN plans on using its new database of staff competencies to offer more training to its staff and to external audiences. This would include training about the competencies learned through the GENIS Lab project. Some of the Project Committee members are planning on assisting with the institutional gender assessment aspect of training as both the INFN and Italy have a huge number of research centres and potential groups with which they could work.

Within just a four-year time span the first point represents a significant achievement, particularly given the starting point. Diverse physicists interviewed as part of the PGA process and for this evaluation case study noted that at the beginning of the GENIS Lab project they had not perceived there was a problem. Now there is not only greatly increased recognition that the problem exists and is a serious one, there are statistics to back this up and a monitoring system developed to track progress in this area.

Contributing Success Factors

External Factors	Internal Factors
The EU asked the INFN President for a letter of engagement.	The Project Committee used the EU Letter of Engagement when necessary to help move the

External Factors	Internal Factors
	process along and obtain senior management support when needed
The funding of this project by the EU acted as a catalyst for change for the INFN in a way that is having both transformative and sustainable results.	The Project Committee was deeply committed to this change process and put in a lot of hours to help make it succeed
There was strong technical support from the Centre advisor – "she was always there, provided us with referrals and resources as we needed them and constructed a professional relationship of trust".	INFN has reputation to maintain within Europe and did not wish to be seen as organization that discriminated against women, even if not intentionally.
The legal framework at the national level was also important as it gave legal impetus and the requirement for INFN to comply on actions related to gender equality and equal opportunity.	The competency based job assessment model was developed through a bottom up process which gave staff the opportunity to contribute to its construction. Consequently, they can see themselves reflected in the tool that gives them a greater sense of ownership of the process.
Funding cuts puts onus on INFN to do things differently and more efficiently.	It was critical to have a sponsor in top management and they could not have succeeded to the extent they did without the President's support.
GENIS Lab helped give the Project Committee the authority and credibility to effect this type of change	The key message communicated was that if both women and men's talents are recognized (and funded), it benefits everyone concerned, but especially the INFN as a whole.
The Centre used highly relevant assessment tools to meet the needs of the INFN (e.g., the PGA).	Being a research institute, the INFN has a strong culture of documenting and tracking results and collecting and analyzing relevant statistics. This has built a convincing body of evidence that has helped the Project gain and maintain senior management support

One Project Committee member also noted that it was not just one thing that contributed to the changes that took place, but rather that it was part of a whole process. The Committee was particularly surprised at how fast the change process was. The evaluation considered that the rapidity of the change was attributable to four key factors – the strong leadership of the Project Committee, strong support from senior management, the funding support from the EU and the high quality of technical support provided by the Centre. The only thing Project Committee indicated it might have done differently would have been to make participation in the competency self-assessment process mandatory.

Remaining Gaps

Committee members indicated there is still a need to train INFN managers about the diverse gender equality issues identified by the project and how to address these as well as to learn how

to recognize different skills based on merit and competencies. The research managers are mainly scientists who have had little or no training in management and they will need additional skills to make this change. They are also waiting to hear what the decision will be regarding a more equitable division of INFN research funds among female and male researchers.

Conclusion

The EU-funded GENIS Lab project represents a bold experiment in institutional change management. For the INFN it was a highly successful experiment and a process that has paved the way for future substantial change with regard to how the Institute will recruits its staff. Since the upscaling of the competency-based assessment model is just starting, it is still too soon to know what effect this will have on the advancement of women scientists. However, the commitment to do this at the most senior level of the organization represents a major success.

Examining the types of change that have taken place as a result of the GENIS Lab project, it is possible to conclude that three types of change have taken place within the INFN:

1. **Operational Change** – through introduction of a Gender Equality Action Plan (TAP) that has clear targets, activities and performance indicators and the facilitation of a Participatory Gender Audit to the INFN. The Institute has adoped aspects of this methodology and continues to track relevant gender statistics.

2. **Evolutionary Change** - there is increased awareness of staff at different levels, but particularly among senior management that INFN has some serious issues to address with regard to systemic and inadvertent gender discrimination, particularly for female scientists. This awareness has evolved over the four years of the project and is likely to continue to grow as the Project Committee and senior management continue their work to promote increased gender equality within the Institute

3. **Transformative Change** – the move to a merit and competency-based job assessment system is revolutionary within this context and one that is potentially game changing for the INFN. The longer-term impacts of this change need to be tracked by both the INFN and the Centre. Another potentially transformative change is the move to try and get management approval for research funding being divided more equitably among women and men researchers.

The GENIS Lab project has also further enhanced the Centre's reputation with regard to its gender expertise as well as validated the efficacy of the ILO Participatory Gender Audit process. It also provides further feedback to the Centre regarding the value of working with more non-traditional learning approaches. Additionally it underscores the observation of its diverse Activity Managers that learning which takes place within the context of a technical cooperation project can be followed up more effectively with appropriate and timely technical support than is the case for more open courses. This technical cooperation approach also helps further reinforce learning results. The ongoing relationship of the Centre with the INFN also has meant that it was easier to track the specific results of the technical support and learning approaches the Centre has used in its work with the Institute. The application of scientific method to the statistical tracking of gender equality issues within the Institute also contributed strongly to providing evidence to support the Institute taking more systematic actions to address these

issues as an organization. The commitment of the INFN and its Project Committee to this change process are inspiring.

Annex 1: List of Persons Met

(In order of meetings)

Name	Title	Institution
1. Rute Mendes	Junior Evaluation Officer	ITC-ILO Evaluation Unit.
2. Patricia O'Donovan	Director	ITC-ILO
3. Andreas Klemmer	Director of Training	ITC-ILO
4. Alessandro Patrone	Evaluation Officer	ITC-ILO
5. Simonetta Cavazza	Manager, International Labour Standards, Rights at Work and Gender Equality Programme.	ITC-ILO
6. Benedetta Magri	Senior Programme Officer, International Labour Standards, Rights at Work and Gender Equality Programme	ITC-ILO
7. Jeanne Schmitt	Senior Programme Officer, Employers' Activities Programme.	ITC-ILO
8. Joel Alcocer,	Senior Programme Officer, Enterprise, Microfinance and Local Development Programme.	ITC-ILO
9. Jesús García Jiménez	Senior Programme Officer, Workers' Activities Programme	ITC-ILO
10. Daniela Klein	Programme Secretary, Workers' Activities Programme	ITC-ILO
11. Johanne Lortie	Senior Programme Officer, International Labour Standards, Rights at Work and Gender Equality Programme	ITC-ILO
12. Miriam Boudraa	Programme Officer, Social Protection, Governance and Tripartism Programme	ITC-ILO
13. Oretta di Carlo	Director of Training	INFN
14. Maria Lucia Paciello	Retired Theoretical Physicist	INFN
15. Sara Arnone	Human Resources Officer	INFN
16. Claudio Gatti	Researcher	INFN
17. Giovanni Mazzitelli	Researcher	INFN
18. Luigi Giunti	General Director	INFN
19. Renato Carletti	Human Resources Director	INFN
20. George Okeyo	Agricultural Business Services Manager	Micro Enterprises Support Programme Trust (MESPT)
21. George Waigi	Programme Officer	ILO - Kenya
22. Alicia Ziffer	Training Programme Coordinator	UN Women
23. Raphael Crowe	Senior Gender Specialist	ILO - Geneva

	Gender, Equality and Diversity Branch - Conditions of Work and Equality Department	

Annex 2: Evaluation Matrix

Category of Analysis or Indicator	Poor	Limited	Good	Excellent or Extensive	Data sources/ Methods
Relevance and outreach of the activity: Relevance refers to the extent to which the objectives of the activity are consistent with beneficiaries' requirements, and partners' and donors' policies.					
EQ 1: How well did the activity operationalize the ILO Action Plan for Gender Equality 2010-2015, the Gender Result-Based Action Plan 2012-15 of the Centre and the four corresponding program and budgets of the Centre?					
Achievement of targets regarding female participation in different learning activities Rating: Poor for Centre overall with regard to achieving an increase in the target. Excellent for gender-focussed courses.	Female participation different learning activities met 25% of targeted increase	Female participation different learning activities met between 26 and 45% of targeted increase	Female participation different learning activities met between 46 and 75% of targeted increase	Female participation different learning activities met over 76% of targeted increase	Gender Action Plans Annual progress reports Activity evaluations Key informant interviews
% of participants completing ITC–ILO gender-specific courses who are male constituents Rating: Good	Male participant completion of ILO gender-specific courses 10% or less	Between 11% and 20% male participants complete ILO gender-specific courses	Between 21% and 30% male participants complete ILO gender-specific courses	Male participant completion of ILO gender-specific courses above 31%	Activity evaluations Key informant interviews Annual reports
% of ITC–ILO online and campus courses evaluated by participants as having adequately integrated gender issues Rating: Good	Up to only 25% of participants evaluate ITC–ILO online and campus courses as having adequately integrated gender issues	Between 26% and 50% of participants evaluate ITC–ILO online and campus courses as having adequately integrated gender issues	Between 11% and 75% of participants evaluate ITC–ILO online and campus courses as having adequately integrated gender issues	Over 70% of participants evaluate ITC–ILO online and campus courses as having adequately integrated gender issues	Activity evaluations Key informant interviews Annual progress reports Survey
Validity of the activity design: Extent to which the design of the activity was logical and coherent.					
EQ2: Were the intended results of the activities logical and realistic?					

Category of Analysis or Indicator	Poor	Limited	Good	Excellent or Extensive	Data sources/ Methods
Clear relationship of intended results and learning materials to participant needs and capacity <u>Rating:</u> Good	Less than 20% of activities' objectives achieved for at least 90% of participants; link between learning objectives and intended results not clear in more than 2 activities	Between 21 and 49% of activities' objectives achieved for at least 90% of participants; link between learning objectives and intended results not clear in one or two activities	Between 50 and 75% activities' objectives achieved for at least 90% of participants; clear link between learning objectives and intended results	Over 76% of activities objectives achieved for at least 90% of participants; clear link between learning objectives and intended results	Course evaluations Key informant interviews – staff Evaluation survey Review of course materials
Degree to which participants thought the activities were appropriate to their learning needs and capacity <u>Rating:</u> Excellent	Less than 20% of participants felt the activities were appropriate	Between 21 and 49% of participants felt the activities were appropriate	Between 50 and 80% of participants felt the activities were appropriate	Over 81% of participants felt the activities were appropriate	Course evaluations Key informant interviews – staff and clients Evaluation survey Review of course materials
EQ 3: Did the end of activity evaluation and (where applicable) the follow up activity evaluation effectively measure results and progress?					
Degree of effectiveness of measurement of results and progress of activity evaluation and follow up activity evaluation (where applicable) <u>Rating:</u> Fair	Activity evaluation design only included general questions about the activity (e.g., what did you like best about the activity?)	Activity evaluation design included general questions about the activity and general questions about what the participants learned	Activity evaluation design included clearly understood questions about all of key learning objectives & knowledge/ skill areas	Activity evaluation design included clearly understood questions about all of key learning objectives & knowledge/ skill areas as well as about each specific learning activity	Review of design of activity evaluations and of participant responses Comparison of Frascati FGD responses on this theme Comparison with survey responses on this theme
EQ 4: How likely was it that the intended results were to be achieved?					
Likelihood of intended results being achieved	Not likely – intended results too	Somewhat likely – some of intended	Most likely – at least 80% of intended	Very likely – more than 81% of	Activity evaluations

Category of Analysis or Indicator	Poor	Limited	Good	Excellent or Extensive	Data sources/ Methods
Rating: Good	ambitious for timeframe, resources, participant capacity and context	results appropriate for timeframe, resources, participant capacity and context	results appropriate for timeframe, resources, participant capacity and context	intended results appropriate for timeframe, resources, participant capacity and context	Key informant interviews Frascati Focus Group Discussions
Effectiveness: Extent to which the activities immediate objectives were achieved, taking into account their relative importance.					
EQ 5: To what extent have the activities been an effective instrument to help promote gender equality in the world of work?					
Extent to which the activities have been an effective instrument to help promoting gender equality in the world of work Rating: Good	Up to 15% of participants reported they had been able to apply the new skills and knowledge they learned to promote gender equality in a workplace setting and were able to provide concrete examples of this	Between 16 and 40% of participants reported they had been able to apply the new skills and knowledge they learned to promote gender equality in a workplace setting and were able to provide concrete examples of this	Between 41% and 60% of participants reported they had been able to apply the new skills & knowledge they learned to promote gender equality in a workplace setting and were able to provide concrete examples of this	Over 61% of participants reported they had been able to apply the new skills and knowledge they learned to promote gender equality in a workplace setting and were able to provide concrete examples of this	Document review Survey Key informant interviews – ILO-ITC staff Key informant interviews – Institutional clients Focus Group Discussions Case studies
Efficiency of Use of Resources: A measure of how economically resources/inputs (funds, expertise, time, etc.) were converted to results					
EQ 6: a) Have the resources invested into the delivery of the activities been used in the most efficient manner? b) How economically were resources and inputs (funds, expertise, time etc) converted to results? C) Did the results justify the cost?					
a-b) Reach and cost of learning activities compared to results achieved and number of participants Rating: Not possible to assess with data provided or available.	Learning models used reached less than 59% of targeted # and type of participants and achieved only up to 35% of anticipated results at a standard or higher cost for	Learning models used only reached up to 60% of targeted # and type of participants and achieved only between 36 to 50% of anticipated results at standard cost	Learning models used reached targeted # and type of participants; achieved at least 80% of planned results at standard or lower cost	Learning models used reached targeted # and type of participants; achieved over 81% of planned results at standard or lower cost	Participant survey Focus Group Discussions Case study interviews Budget review Key informant interviews

Category of Analysis or Indicator	Poor	Limited	Good	Excellent or Extensive	Data sources/ Methods
	this activity	for this activity	for this activity	for this activity	
Estimated cost of alternative learning activities to achieve the same results Rating: Not possible to assess with data provided or available.	Alternative learning activities to achieve the same results cost up to 30% less than the activities models used	Alternative learning activities to achieve the same results cost between 29 and 10% less than the activities models used	Alternative learning activities to achieve same results either cost the same or within 10% less of the activities models used, but models used have a greater reach	Alternative learning activities to achieve the same results cost the same or more than the activities models used and the models used would have more sustainable results	Participant survey Focus Group Discussions Case study interviews Budget review Key informant interviews
Effectiveness of Management Arrangements: The extent to which management capacities and arrangements put in place supported the achievement of results					
EQ 7: Were the roles and responsibilities of Centre officials, including program management, who were responsible for the implementation of the activities clearly defined and understood?					
Degree to which roles and responsibilities of Centre officials, including programme management responsible for activities clearly defined and understood (staff and participants) Rating: Excellent	General lack of clarity regarding which team members were to do what with regard to learning activity design & implement-tation. Less than 15% of participants clearly understood roles and responsibilities of Centre officials responsible for activities	Existence fo some confusion and overlap between roles of each staff team member to the design and implement-tation Between 16 and 49% of participants clearly understood roles and responsibiliti es of Centre officials responsible for activities	Role of each staff team member to the design and implement-tation clearly understood by 85% of staff concerned. Between 50 and 70% of participants clearly understood roles and responsibilit -ies of Centre officials responsible for activities	Role of each staff team member to the design and implement-tation clearly understood by more than 85% of staff concerned. Over 70% of participants clearly understood roles and responsibili-ties of Centre officials responsible for activities	Participant survey Focus Group Discussions Case study interviews Activity evaluations
EQ 8: Were the current arrangements for implementing the activities effective?					
Effectiveness of	Current	Current	Current	Current	Participant

Category of Analysis or Indicator	Poor	Limited	Good	Excellent or Extensive	Data sources/ Methods
current activities implementation arrangements Rating: Excellent	implementa-tion arrange-ments went smoothly for less than 50% of participants	implementa-tion arrange-ments went smoothly for between 50 and 89% of participants	implementa-tion arrange-ments went smoothly for up to 90% of participants	implementa-tion arrange-ments went smoothly for over 91% of participants	survey Activity evaluations Key informant interviews Frascati FGD
EQ 9: Were the activities coordinated across technical programmes?					
Degree to which gender equality related learning activities were integrated into other technical programmes and related technical expertise shared with other technical programmes times Rating: Excellent for the four courses included in the sample.	Less than Between 40% of Centre's other technical pro-grammes integrate GE related learning activities and call upon ILSGEN expertise and/or tools	Between 40 and 64 % of Centre's other technical pro-grammes integrate GE related learning activities and call upon ILSGEN expertise and/or tools	Between 65 and 84% of Centre's other technical pro-grammes integrate GE related learning activities; call upon ILSGEN expertise and/or tools	Over 85% of Centre's other technical pro-grammes integrate GE related learning activities and call upon ILSGEN expertise and/or tools	Course material review Key informant interviews Survey
Impact orientation of the activity: The strategic orientation of the activity towards making a significant contribution to broader, long-term, sustainable development changes, and whether the changes have been durable/were replicated by beneficiaries					
EQ 10: a) To what extent have the results of the activities been maintained or up-scaled by participants thus far? (Evaluation question added) **b) How likely is it that the results of the activities will be maintained or up-scaled by the participants?**					
a) Extent to which results of the activities have been maintained or upscaled Rating: Good	Results from less than 2 of the 10 activities being evaluated have been scaled up or maintained[44]	Results from between 3 to 4 of the 10 activities being evaluated have been scaled up or maintained	Results from 5 or 6 out of the 10 activities being evaluated have been scaled up or maintained	Results from more than 7 out of the 10 activities being evaluated have been scaled up or maintained	Follow up reports Participant surveys Key informant interview Frascati FGD
b) Likeliness of the activities being maintained or scaled up in the future	Not likely	Somewhat likely	Quite likely	Commit-ment to do so within the next year already	Follow up reports Participant surveys Key informant

[44] Evaluator has revised the ratings scale from that were approved during the Inception process to reflect a more accurate measure of progress.

Category of Analysis or Indicator	Poor	Limited	Good	Excellent or Extensive	Data sources/ Methods
Rating: Good				made	interview Frascati FGD

Annex 3: Evaluation Instruments

Semi-structured Interview Questions for Stakeholders/Partners

Date: Name: Organization:
Learning Activity/Training course:

1. What was the objective of the technical cooperation project through which this training was conducted? How did this training support the achievement of these objectives?

2. Who were the main target groups for this training? EQ1

3. How well do you think these learning activities matched the participants' needs and capacity? EQ2 (In your opinion, were they logical and realistic?)

4. What results have been achieved since the completion of these learning activities and for which groups? What evidence do you have of these results? IQ1, IQ5

5. What are the key factors that contributed to these changes/results? EQ4, EQ5, IQ5

6. To what extent have the results of these learning activities been maintained or upscaled or are likely to be in the future? Can you provide any examples/evidence? EQ10

7. Were there any factors that prevented optimal learning related to this training learning from taking place? EQ4

8. Are there any particular gaps in the learning or results that remain that could/should be addressed through follow-up activities? IQ2

9. Are there any particular groups you feel that this training did not reach? EQ4

10. How well do you think learning activity evaluations used by the ITC-ILO capture the quality of the training/learning and assess what the participants have learned? EQ3

11. How were gender equality issues integrated into the training? EQ1, EQ9

12. Are there any alternatives to the types of learning activities you have been offering that you think would have been more cost effective? If so, what are these? EQ6

13. Did each team member have a clear understanding of what their roles and responsibilities are for the design and implementation of the gender-related learning activities? EQ7

14. How effectively were the training plan and arrangements communicated to participants? EQ 7

15. Do you find the arrangements in place to implement these learning activities to be effective? What works well? What still needs some strengthening? EQ 8

16. Do you have any recommendations you would make for changes for future training or learning activities of this nature?

Participants Survey: English

Participants Survey - ITC-ILO Evaluation of Training and Learning Activities on the Thematic Area of "Promotion of Gender Equality and Diversity"

Welcome!

The Activity Manager from the learning activity you took through the ILO/ITC will have contacted you recently to ask you if you could participate in this survey. It is designed to find out more about how the ILO/ITC is addressing the theme of gender in its courses and related activities. This will help them build on and strengthen their approach to this theme in the future.

We would be grateful if you could take the time to fill out this survey to assist us with this process. It will take approximately 15 to 20 minutes to complete. All responses will remain anonymous. Our deadline to complete the survey is Sunday, the 19th of July.

If you have any questions about the survey or have any technological problems filling out the survey, please contact: Dana Peebles – kartini@sympatico.ca

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A. Background Information

1. Are you:

a. Male b. Female

2. Please indicate in which sector you work:
    a. Government
    b. Workers' Organization
    c. Employers' Organization
    d. Academic
    e. Civil Society/non-profit organization
    f. UN Agency
    g. Unemployed

h. Other (please describe)

3. Which course or learning activity did you attend between May 2013 and June 2014:

i.	Gender Academy
ii.	ILO Participatory gender audit facilitators' certification
iii.	Gender Equality for Development Effectiveness
iv.	Gender and Organizational Change
v.	Workshop 1: Gender planning and budgeting in Burundi's budget cycle
vi.	Linkages between migration, gender, and development in Latin America
vii.	Capacity building for trade unions on mainstreaming gender equality and empowering women workers
viii.	Employers' organizations and women entrepreneurs: How to reach out?
ix.	Making markets more inclusive for women and youth to promote entrepreneurship and job creation in Kenya

B. Relevance and Outreach of the Activity

4. How did you find out about this course or learning activity?
    a. ITC/ICO website
    b. Referral from a colleague/friend
    c. Invitation from your employer
    d. Other source (please describe)

5. Did the activity outline or flyer include any reference to the activity's gender equality objectives or content?

    a. Yes
    b. No
    c. Don't remember

6. Were there any particular demographic groups you felt were not represented among the participants in this learning activity who you think should have been there?

    a. Yes
    b. No

7. If yes, please indicate which groups were under-represented:
    a. Men

b. Women
c. Ethnic or other minorities
d. People with disabilities
e. Other (please describe)

8. How relevant were the activity's content and topics to your professional needs related to promoting gender equality? Please select the rating most applicable for you.

a – not at all relevant
b – to a limited extent
c – was mostly relevant
d - was highly relevant

C. Validity of the Activity Design

9. Were the learning activities related to gender at a level appropriate for your previous level of knowledge and skills?

   a. No, the activities were too basic
   b. No, the activities required more knowledge and skills than I had at the time
   c. Yes, the activities built further upon my previous level of knowledge and skills

10. Were the activities related to gender presented in a logical way?

    a. No
    b. Some of the time
    c. Most of the time
    d. All of the time

11. Were the learning objectives for this activity related to gender realistic within the time frame of the activity?

    a. Only a bit realistic
    b. Some of the gender related learning objectives were realistic
    c. Most of the gender related learning objectives were realistic
    d. All of the gender related learning objectives were realistic
    e. There were no explicit gender related learning objectives

12. Do you think the activity evaluation you filled out right after the learning activity effectively measured the results and progress you made through this learning activity?

    a. Yes
    b. Most, but not all questions were clear
    c. I don't remember
    d. The following key area was left out or was unclear (please describe)

D. Effectiveness

13. To what extent have you been able to apply what you learned through this activity in your work?

    a. Not at all
    b. Occasionally
    c. On a monthly basis
    d. More than once a month

14. If not at all or only occasionally why was this the case? Please select all statements below that are applicable.

    a. I did not feel I had sufficient skills or knowledge after taking part in the activity to do so
    b. The environment in which I work is not supportive
    c. Other (please describe)

15. If on a monthly basis or more than once a month, what factors made this possible? Please select all statements below that are applicable.

    a. The new knowledge and skills I gained were very applicable to the context in which I work
    b. I received support from colleagues and managers to do so
    c. My advocacy skills to promote gender equality were strengthened as a result of the learning activity
    d. Other (please describe)

16. Did what you learned in this activity contribute to any of the changes listed below in your place of work? Select all changes applicable.

    a. I was able to train my colleagues about what I learned about how to promote gender equality and related tools
    b. I was able to influence a change or changes in how my organization addresses gender (e.g., a practice or policy)
    c. I was able to set up or participate in a network related to the promotion of gender equality
    d. Representation of women in leadership in my organization increased
    e. Representation of women's membership in my organization increased
    f. None of the above
    g. Other (please describe)

17. Please indicate which of these results are likely to be maintained in the future:

    a. I was able to train my colleagues about what I learned about how to promote gender equality and related tools

b. I was able to influence a change or changes in how my organization addresses gender (e.g., a practice or policy)
c. I was able to set up or participate in a network related to the promotion of gender equality
d. Representation of women in leadership in my organization increased
e. Representation of women's membership in my organization increased
f. Other (please describe)

18. Are any of these results likely to be replicated or scaled up in the future?

a. Yes b. No

19. If yes, which ones and in what way? Please describe:
    a. I was able to train my colleagues about what I learned about how to promote gender equality and related tools
    b. I was able to influence a change or changes in how my organization addresses gender (e.g., a practice or policy)
    c. I was able to set up or participate in a network related to the promotion of gender equality
    d. Representation of women in leadership in my organization increased
    e. Representation of women's membership in my organization increased
    f. Other (please describe)

20. Did this learning activity make use of social media (SMS messages, twitter, facebook) before, during or after the activity? Please select all answers that apply.

Twitter	**SMS Messages**	**Facebook**
Before	Before	Before
During	During	During
After	After	After
Not used	Not used	Not Used

Other social media used (please specify which type)

21. Did the use of social media add value to the learning process and experience for you?

Twitter	**SMS Messages**	**Facebook**
Added Value	Added Value	Added Value
Did not add value	Did not add value	Did not add value
Not used	Not used	Not used

E. Efficiency

22. Do you think that the funds and time invested in this learning activity (both yours and that of the ITC/ILO or donor) were an efficient use of capacity building resources?

a. No
b. To some extent
c. To a large extent

d. It was a highly efficient use of time and resources

23. Are there any alternative ways of learning similar skills and knowledge related to promoting gender equality that you think would cost less in terms of time and money?

    a. Yes b. No

    c. If yes, please describe:

F. Effectiveness of Management Arrangements

24. Did you receive sufficient information about the learning activity and related logistics before the course started?

    a. Yes b. No

    c. If no, what was missing?

G. Recommendations

25. Is there anything that you would recommend that the ILO/ITC do differently to promote gender equality through its learning activities?

    a. Yes b. No

    c. If yes, please describe:

26. Do you have any other comments to add?

Thank you for taking part in this survey. Your feedback is a great help to the ITC/ILO to strengthen and build on its work to promote gender equality.

References

GENIS Lab. 2011. INFN Trieste Report – Gender-Based Organizational Assessment. Turin: ITC-ILO.

ILO. 2010. ILO Action Plan for Gender Equality 2010–15: Phase I: Aligned with Programme and Budget 2010–11. Geneva: ILO.

INFN. 2013. Integrated Tailored Action Plan. Frascati: INFN

ITC-ILO. 2015. 2015 - Allocation of Captive Funds by Technical Programme. ITCILO - 7/8/2015.

ITC-ILO. 2015. Innovation Fund 2015: Theme – Reaching Out to Women. ITCILO – TDIR – 15.5.2015.

ITC-ILO. 2014. Mainstreaming Gender Equality: progress report. CC77/5. Turin: ITC-ILO.

ITC-ILO. 2014. Gender Result-Based Action Plan 2012-2015 – Progress at May 16, 2014. Turin: ITC-ICO.

ITC-ILO Course Flyers:

- Gender and Organizational Effectiveness – 26-30 May, 2014
- Gender and Organizational Change - 31 March – 4 April 2014
- Links between Labour Migration, Gender and Development in Latin America and the Caribbean. 19 - 23 August 2013

ITC-ILO. Final Reports. Turin: ITC-ICO.

- Gender and Organizational Change. 2014
- Gender and Organizational Effectiveness. 2014.
- Employers' Organizations and Women Entrepreneurs: How to reach out. Stocktaking Conference. 2014.
- Employers' Organizations and Women Entrepreneurs: How to reach out. Kingston, Jamaica

ITC-ILO. End-of-Course Evaluations. Turin: ITC-ICO.

- Gender and organizational change – 2014
- Gender equality for development effectiveness – 2014
- Capacity building for trade unions on mainstreaming gender equality and empowering women workers - 2014
- ILO Participatory Gender Audit Facilitators Certification. Face-to-Face Component. 2014.
- ILO Participatory Gender Audit Facilitators Certification. Distance Learning Component. 2014.
- Employers' Organizations and Women Entrepreneurs: How to reach out.
- Making markets more inclusive for women and youth to promote entrepreneurship and job creation in Kenya – 2013
- Links between labour migration, gender and development in Latin America – 2013

ITC-ILO. Follow-up Evaluation Reports: Turin: ITC-ILO.

- ILO Participatory Gender Audit Facilitators Certification. 2014.
- 2013 Gender Academy. 2014.
- 2011 Gender Academy. 2014.

ITC-ILO. 2011. Results-based Strategic Plan for 2012-15. CC73/3. Turin: ITC-ICO.

ITC-ILO. 2011. Gender Common Self-Assessment Agenda. Turin: ITC-ICO.

Peebles, Dana. 2014. Gender Analysis of Open and Distance Learning in the Caribbean Region. Vancouver: Commonwealth of Learning.

http://www.webmd.com/health-insurance/20110609/1-billion-people-are-living-with-disabilities

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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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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

CONTENTS

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

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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).

***

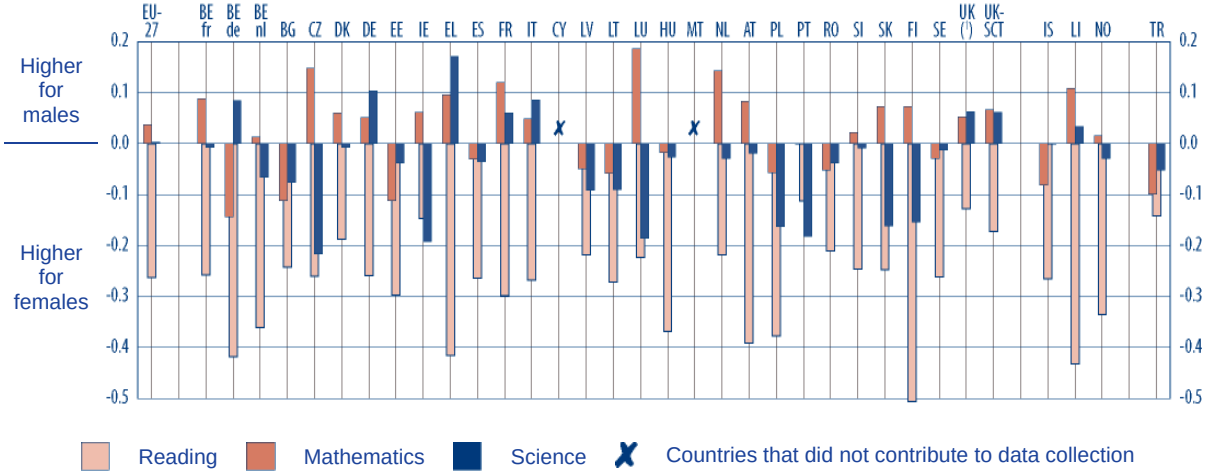
Data on low achievers and/or students without basic skills are invaluable indicators of inequality in education. The PISA scores are allocated to scales divided into difficulty levels that represent groups of PISA test questions. The scales allow concentrating on performance or competencies levels, including 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
	-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
	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
	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
	-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
	-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
	-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

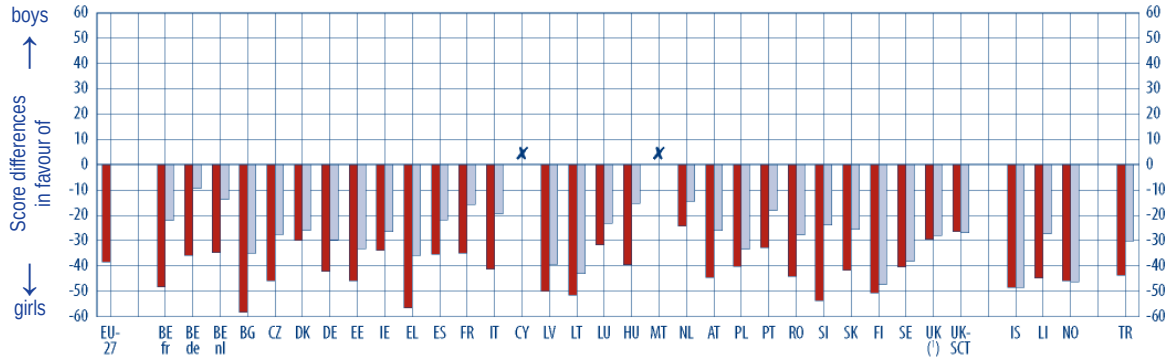
Explanatory notes

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

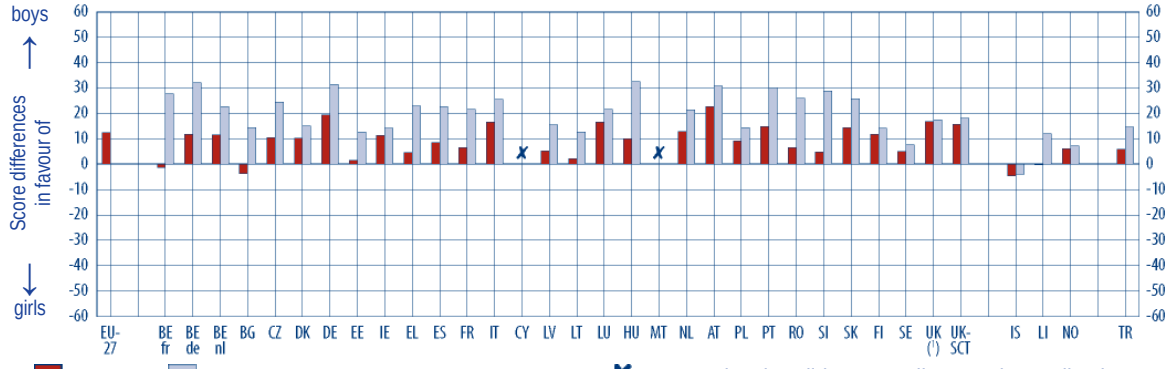


Total | Controlled for school year and stream | ✗ Countries that did not contribute to data collection

	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
Total	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
Controlled		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
Total	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
Controlled	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.

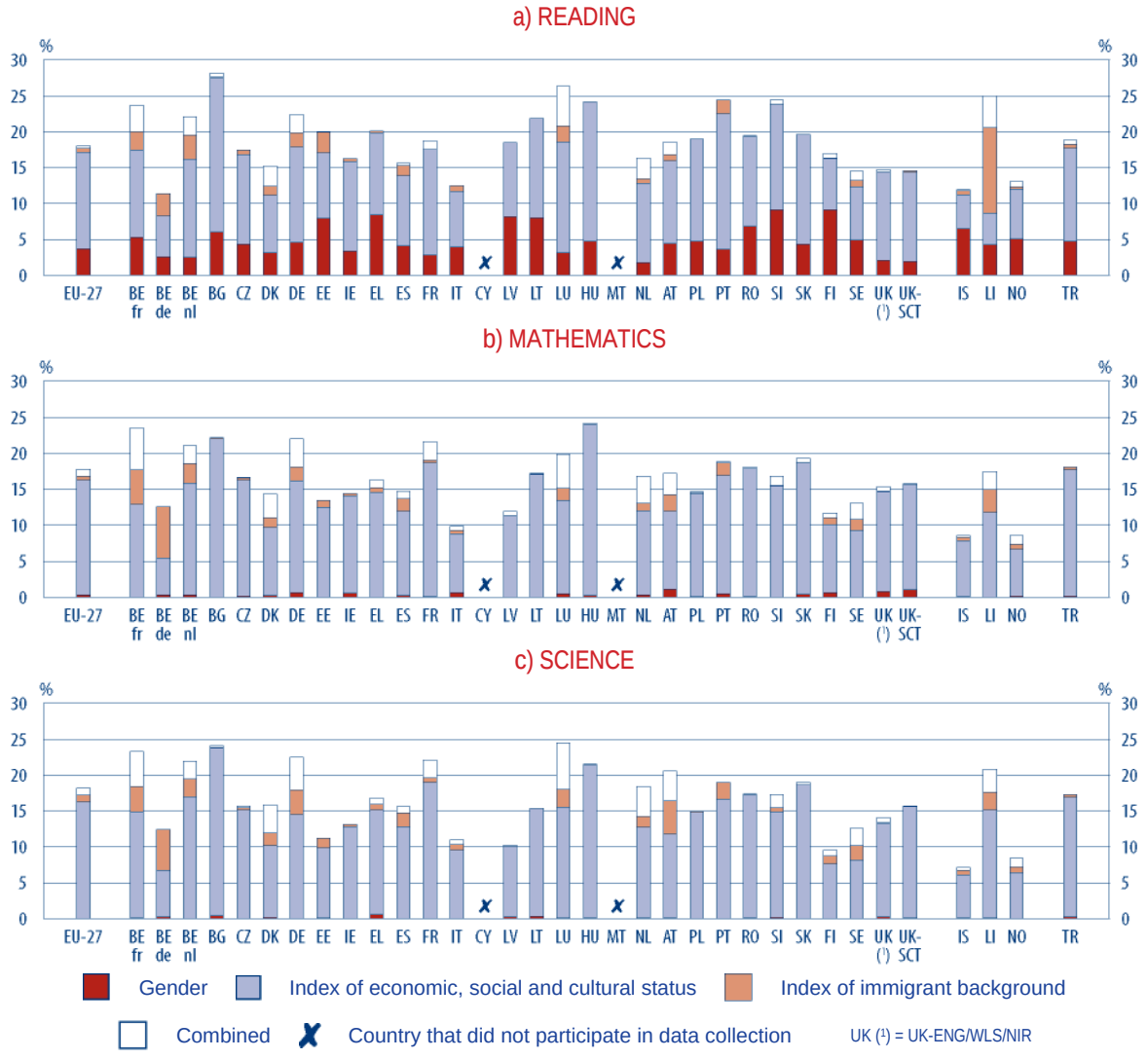
Gender is less important than socio-economic status in predicting achievement. Only in reading is gender statistically significant in all countries (controlled for socio-economic status and immigrant background) and accounts for about 2 - 9 % of total variance. In contrast, in Figures 2.3 b and c showing 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.

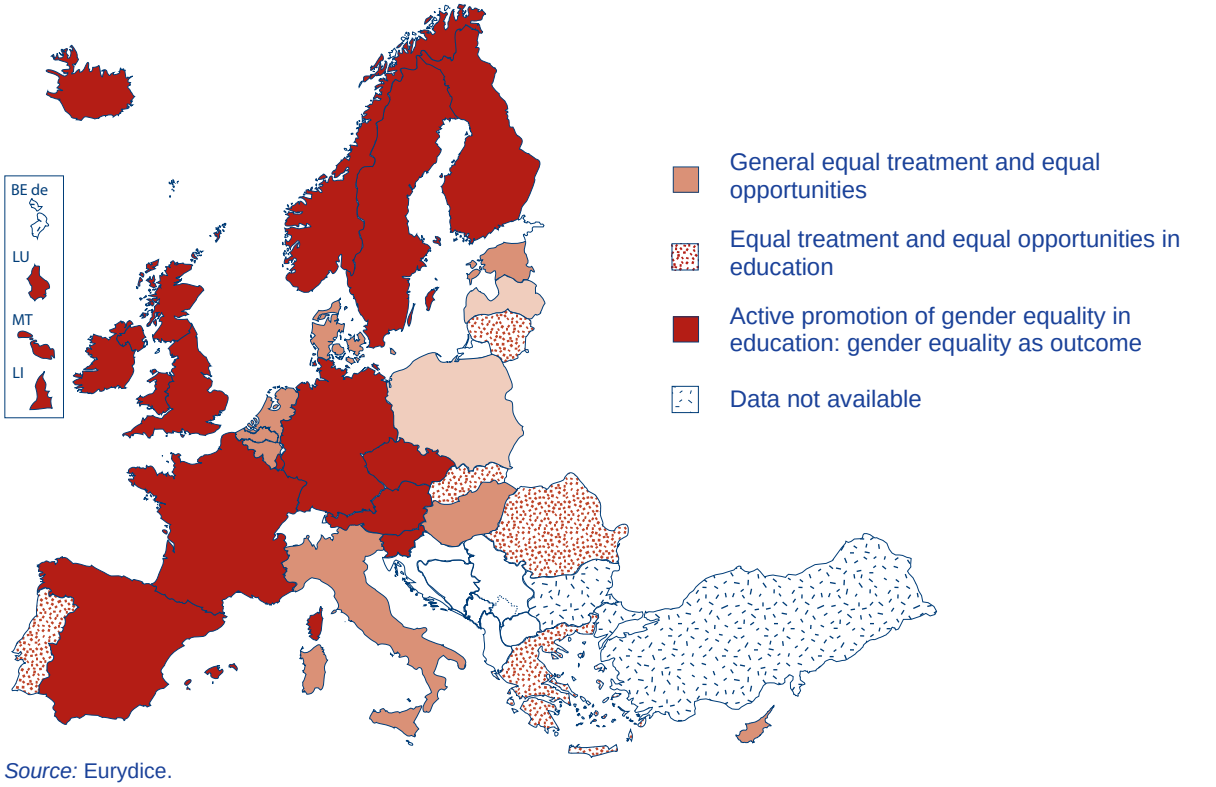
Secondly, in **Slovenia**, while education legislation only includes the principle of equal treatment and equal opportunities, the 1996 White Paper on Education, which contains the main principles of the Slovenian education system, refers to the need to 'shift' the emphasis 'from formal rights and equal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

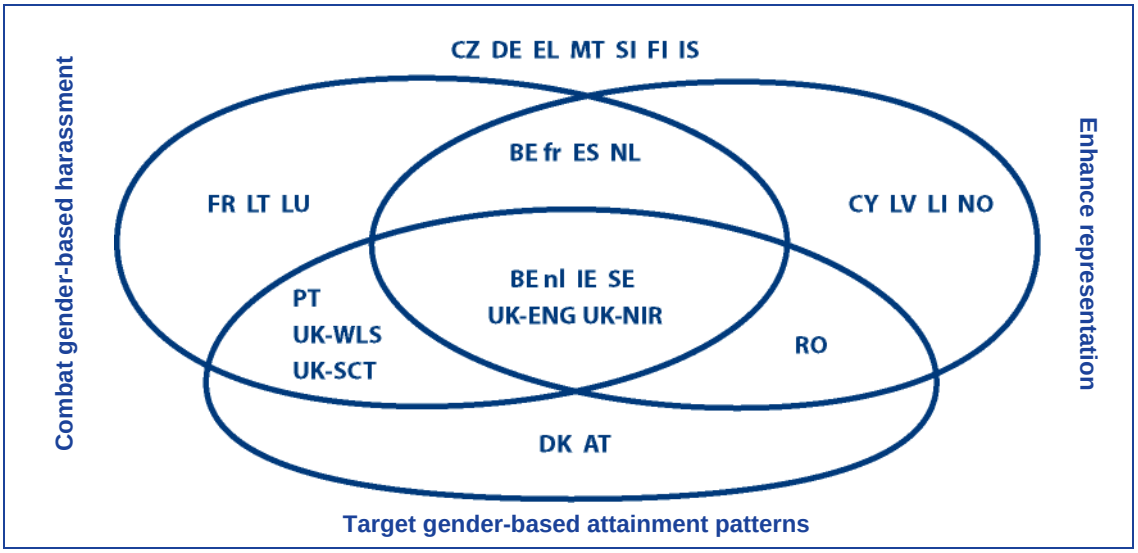
Besides designing appropriate and gender-conscious curricula, a common policy tool in this regard is to provide guidance for pupils, most importantly for girls, to encourage them to choose non-typical vocational training or higher education fields of study (see Chapters 4 and 8). Providing guidance to 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.

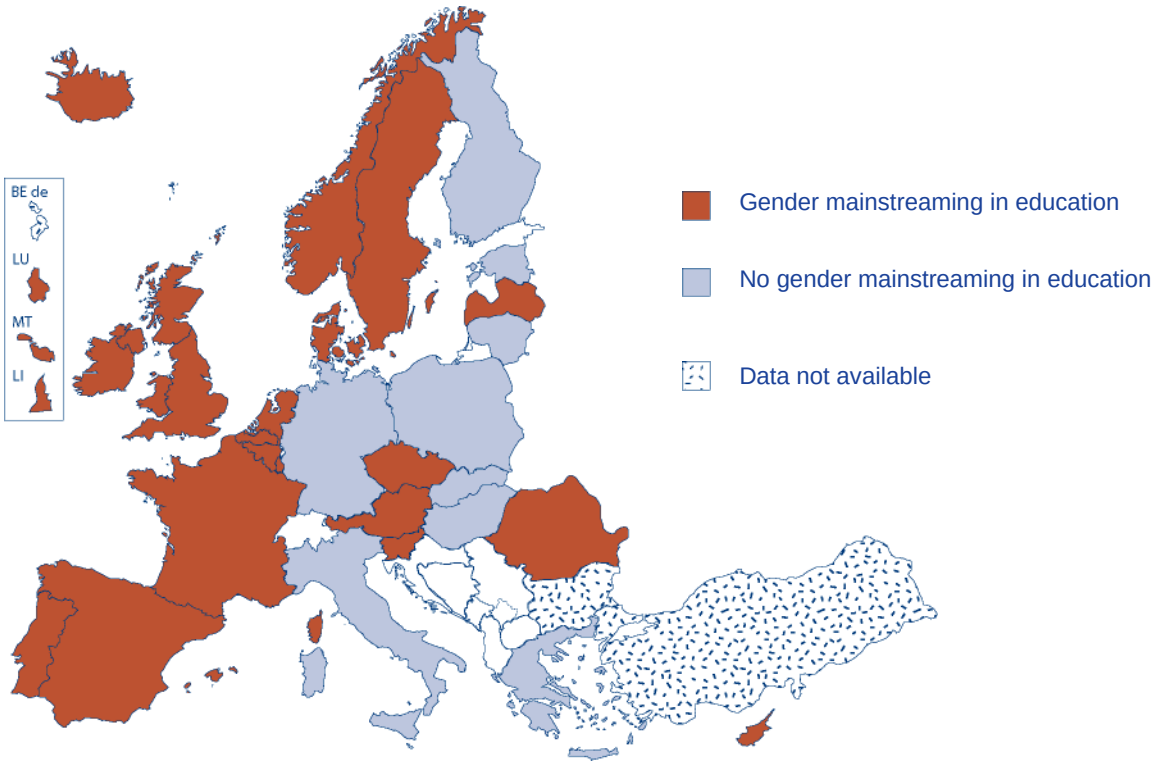
Additional note

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.

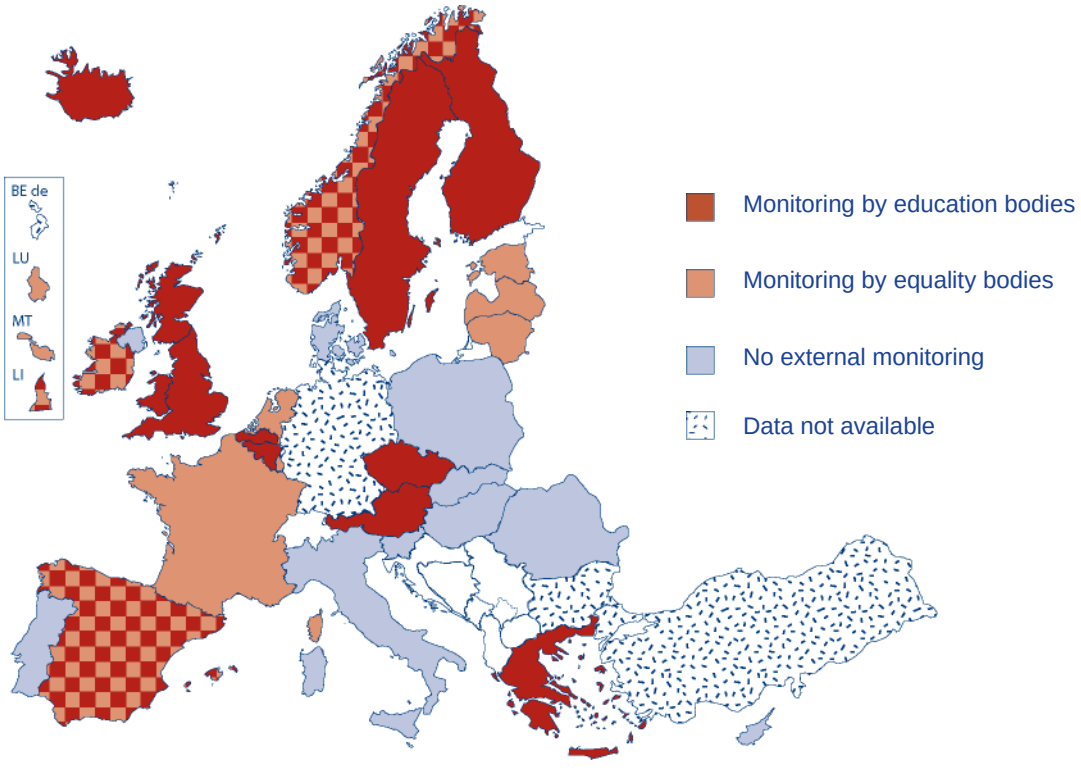
In Latvia, the gender mainstreaming approach was chosen instead of separate and targeted gender equality provisions to solve problems of inequality between women and men. Therefore, gender equality principles and regulations should be applied at all levels of policy-making.

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.

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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).

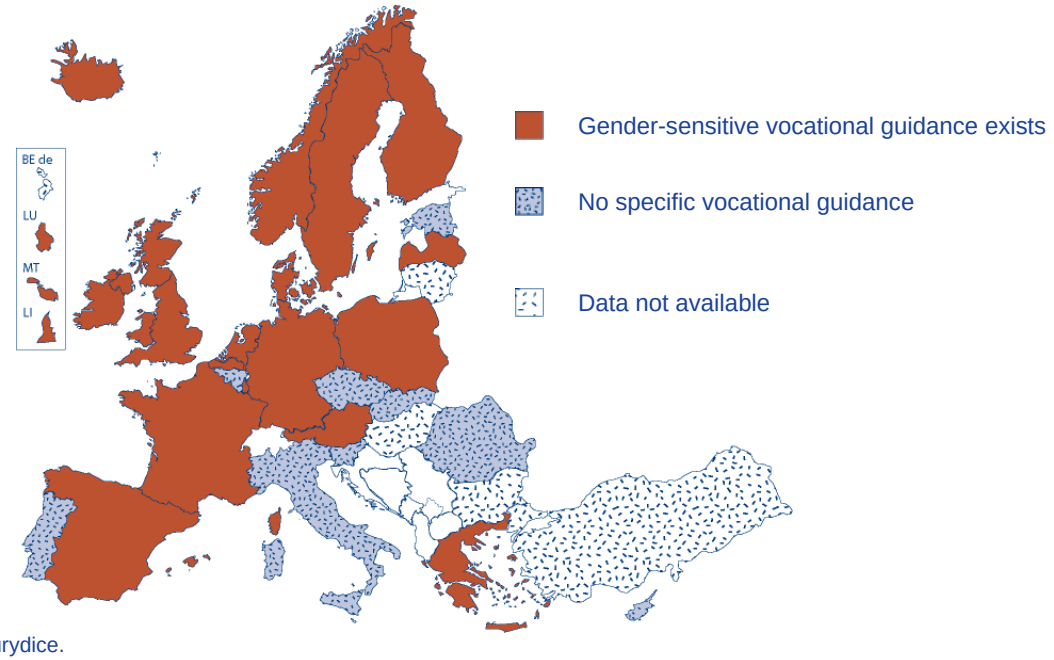
In France, there are very high percentages (about 95 %) of girls in such specialities as flexible materials, secretarial/ office systems, health and social care and hairdressing/beauty/personal services, and very low (less than 7 %) in civil engineering/building/carpentry and engineering (mechanical/electrical/electronic). 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.

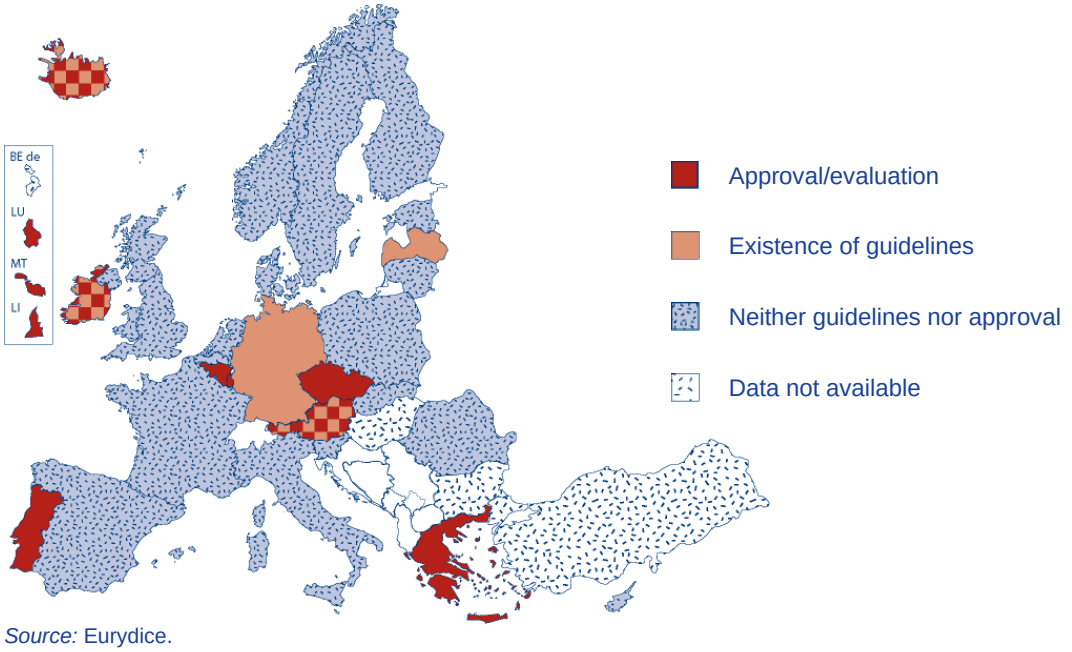
Guidance manuals for vocational guidance professionals in the education sector including the gender perspective are available in the Czech Republic, Spain, Ireland and Malta. In Norway, a project is currently mapping the attitudes of guidance counsellors towards gender roles and non-traditional educational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

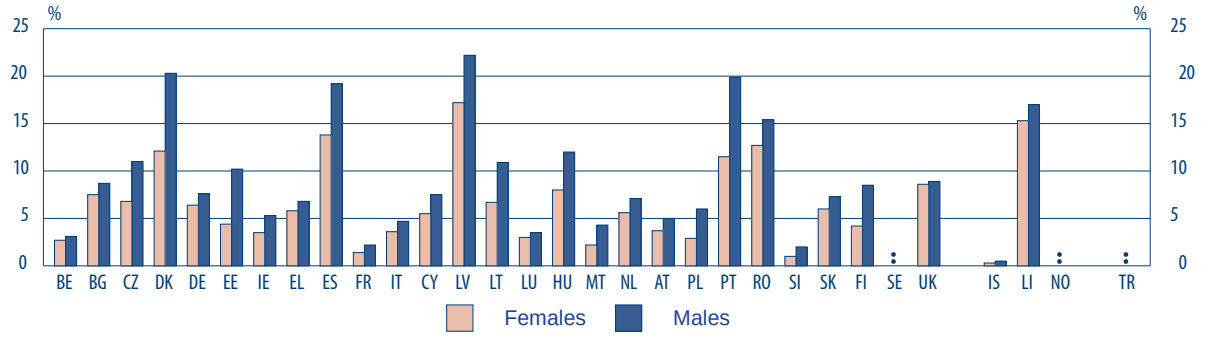
All of the data outlined below suggests that, in general, boys are underachieving compared to girls. However, special disadvantaged groups with low attainment do exist within the general population of boys and girls. In order to fully consider them, a special section presents the relevant country-specific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

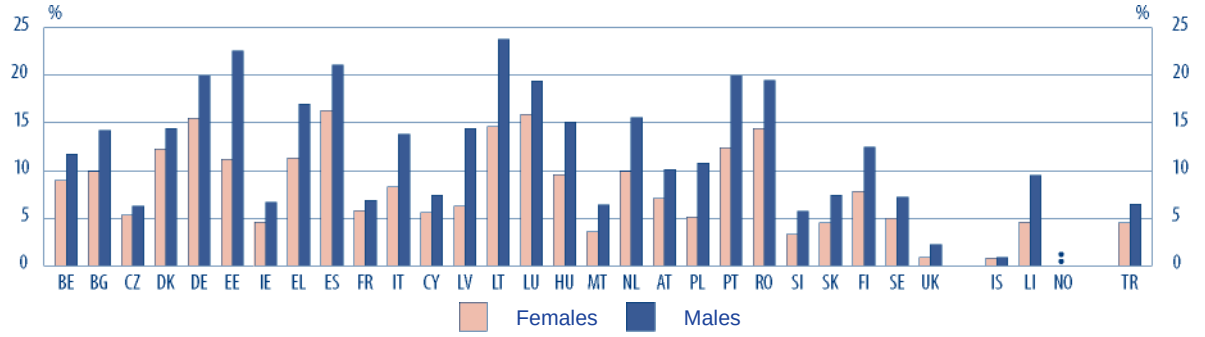
In the **Czech Republic** in 2008/09, boys constituted 64 % of pupils entering compulsory education later than the school starting age (ÚIV, 2009). The start of compulsory schooling (i.e. at six years) may be postponed by one year at the request of the legal guardian if the child is not physically or 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)).

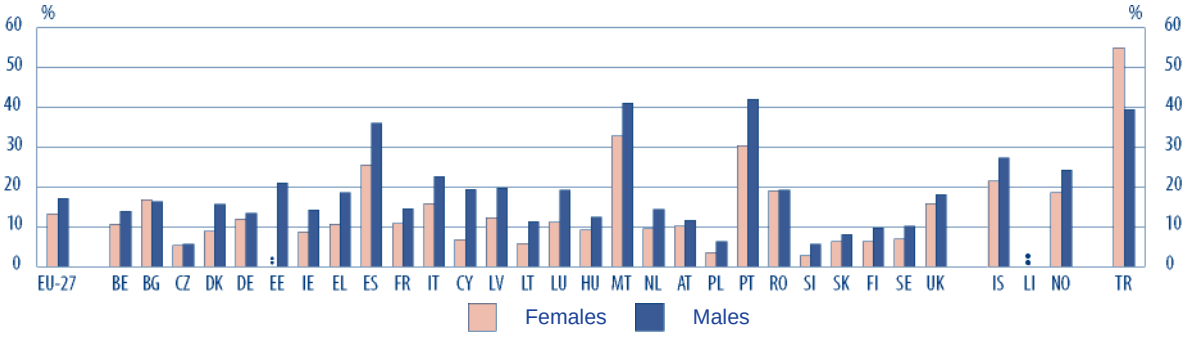
In Slovenia in 2008 in the 9-year basic school, 68 % of pupils who repeated a year were boys (SORS, 2009).

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.

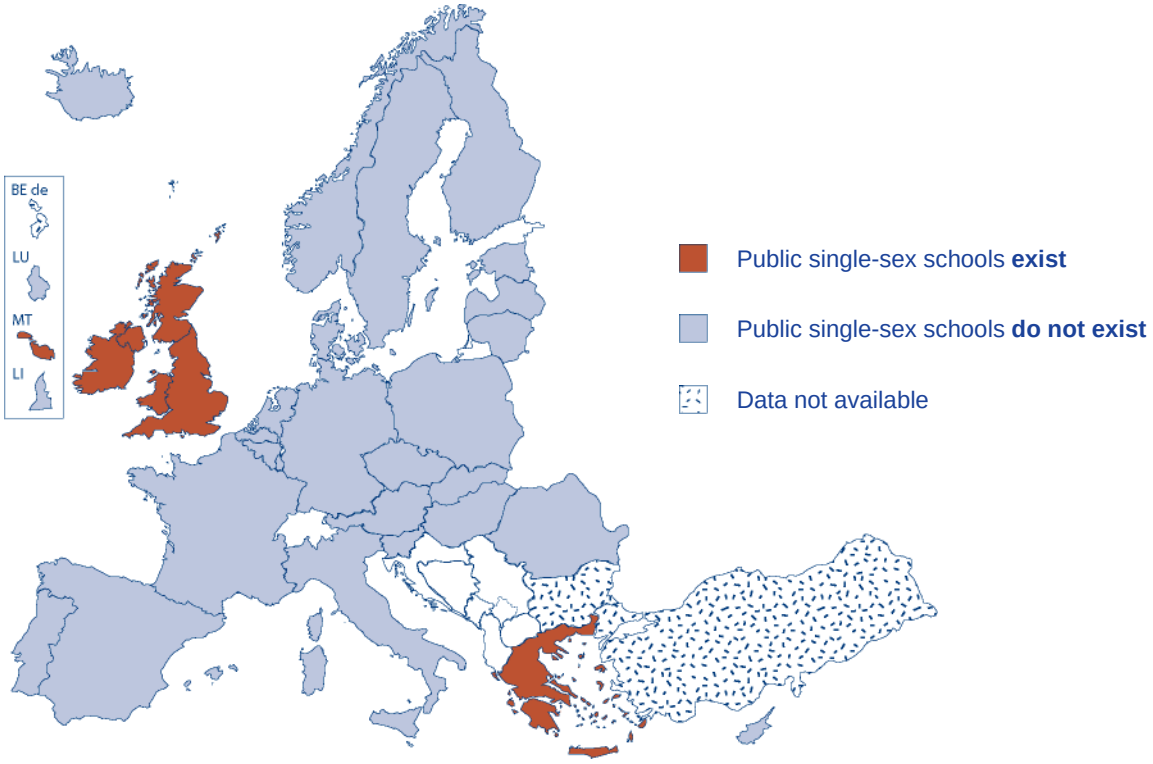
6.1. Single-sex schools

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.

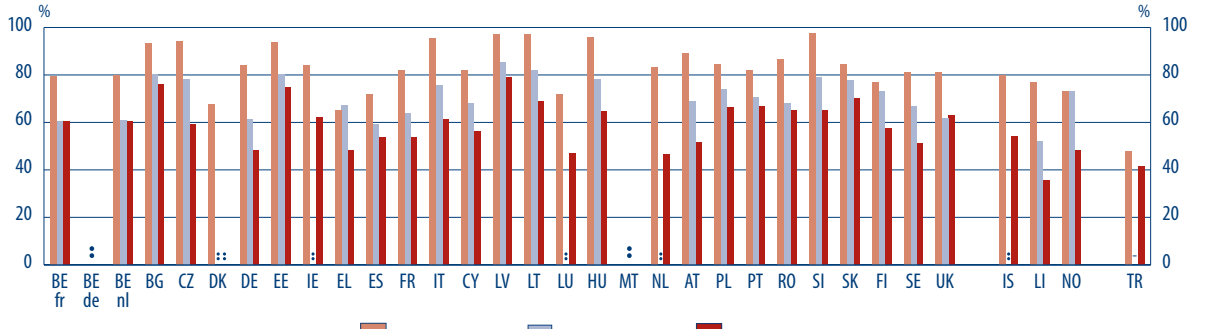
However, female representation decreases markedly the higher the level of education in all countries for which data is available.

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.

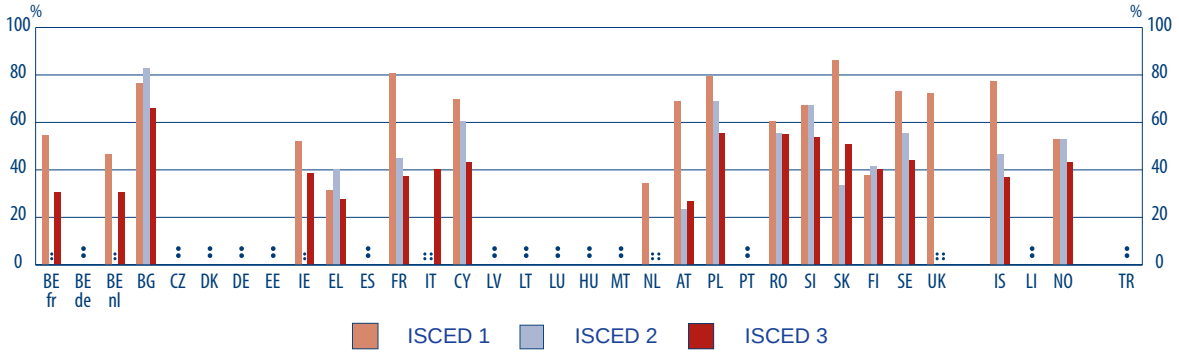
Regarding female participation in school management positions, the situation is also relative to the level of education. Based on the available data, women are often over-represented as heads of primary schools. In fact, in Bulgaria, France, Poland, Slovakia, Sweden, the United Kingdom and Iceland, over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

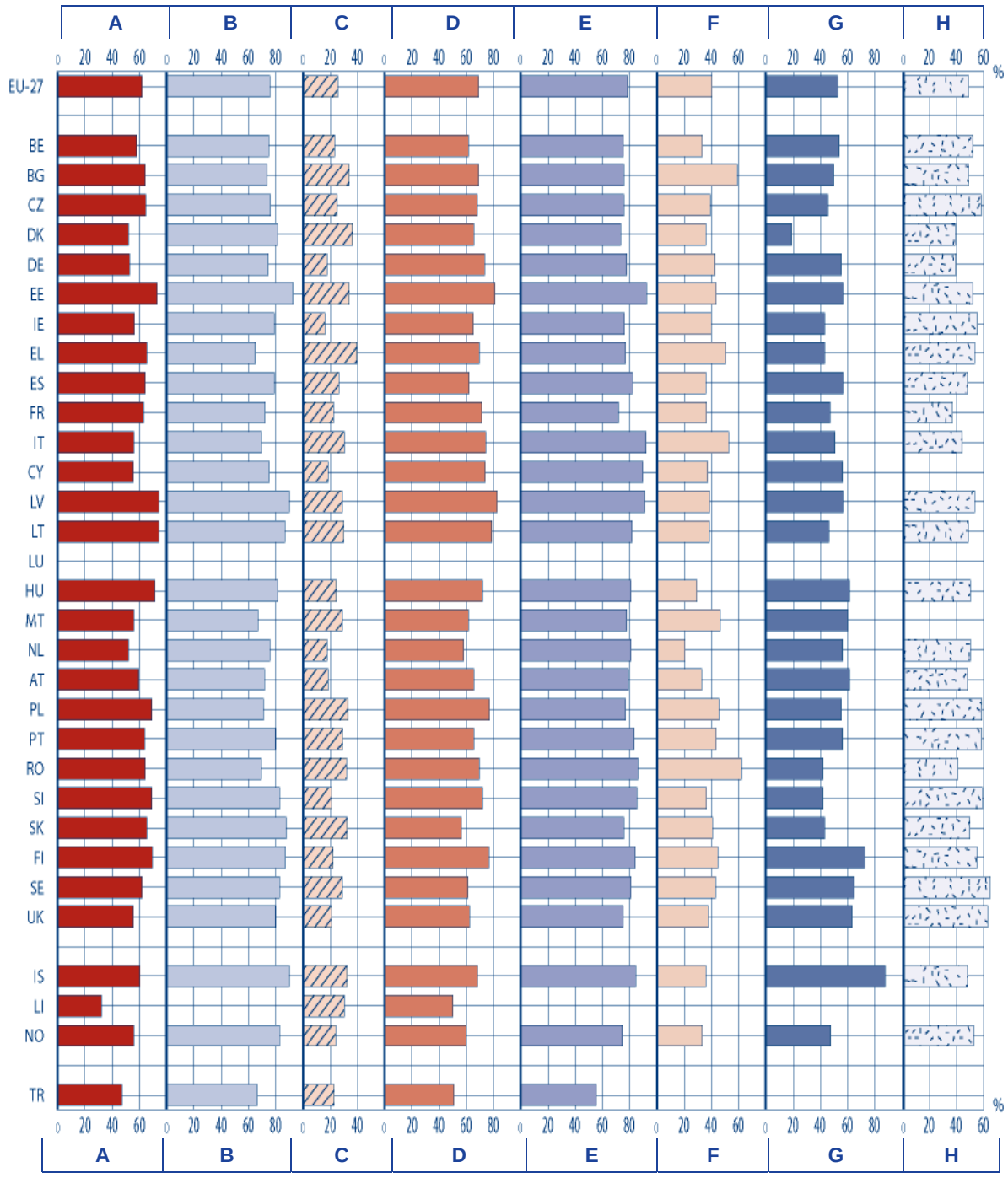
A majority of European countries have designed policies or have supported projects targeting gender inequalities in higher education. Several countries incorporate specific gender equality provisions in legislation or in governmental strategies and some make it compulsory for higher education institutions 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 %.

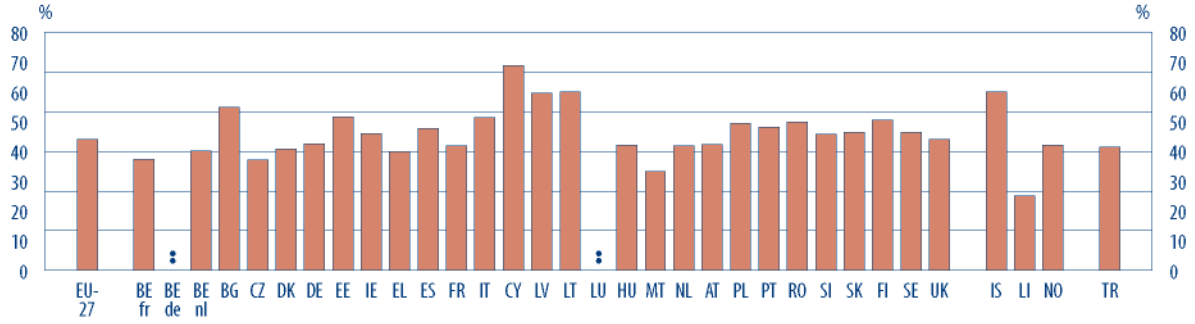
This increase in the proportion of female graduates has not been seen as problematic in the vast majority of countries, primarily since the differences between the participation rates of women and men are not very big in most countries. Nevertheless, a report by the Higher Education Policy Institute (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

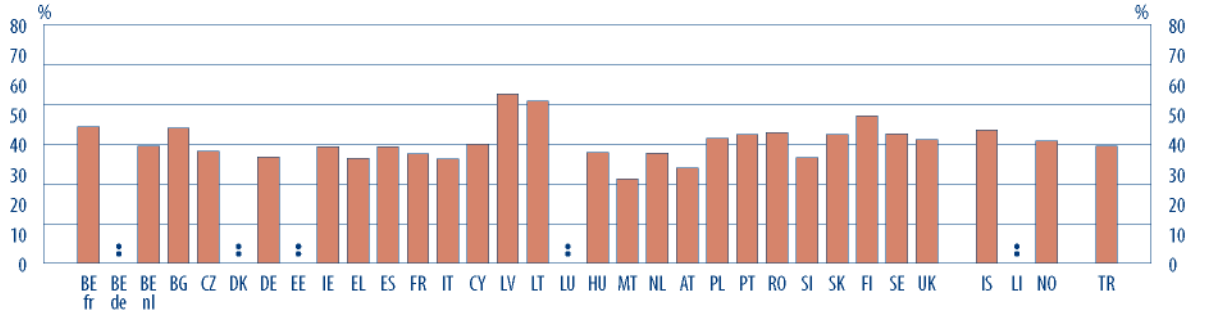
LU	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK	IS	LI	NO	TR
:	42.1	33.3	41.8	42.4	49.4	48.2	49.9	45.8	46.4	50.6	46.4	44.1	60.0	25.0	42.2	41.4

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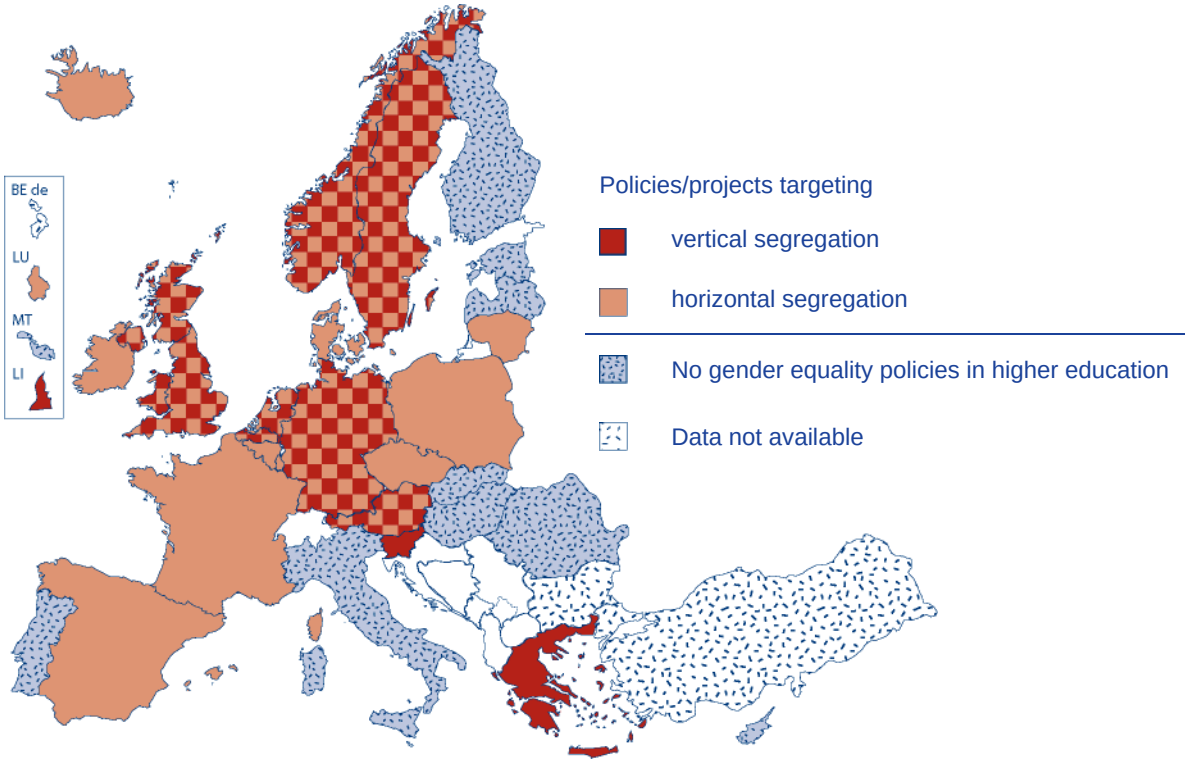
([1]) See: http://www.lnvh.nl/

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

REFERENCES

Adler, S., 2007. Libraries. In K. Myers, H. Taylor, S. Adler & D. Leonard, eds. *Genderwatch: …still watching.* Stoke-On-Trent: Trentham, pp. 138-140.

Arnot, M., David, M. & Weiner, G., 1999. *Closing the Gender Gap: Postwar educational and social change*. Cambridge: Polity Press.

Babanová, A. & Miškolci, J., eds., 2007. *Genderově citlivá výchova: Kde začít?* [pdf] Prague: Žába na prameni. Available at: www.rppp.cz/index.php?s=file_download&id=85 [Accessed 22 October 2009].

BMUKK (Bundesministerium für Unterricht, Kunst und Kultur) [Austrian Federal Ministry for Education, Arts and Culture], 2007. *Gender & Lesen. Geschlechtersensible Leseförderung: Daten, Hintergründe und Förderungsansätze*. Wien: BMUKK.

BMWF (Bundesministeriums für Wissenschaft und Forschung) [Austrian Federal Ministry of Science and Research], 2009. *Datawarehouse Hochschulbereich.* [Online] Available at: http://www.bmwf.gv.at/unidata [Accessed 19 October 2009].

Boaler, J., 1997. *Experiencing School Mathematics: teaching styles, sex and setting*. Milton Keynes: Open University Press.

Booth, C. & Bennett, C., 2002. Gender mainstreaming in the European Union: Towards a new conception and practice of equal opportunities? *The European Journal of Women's Studies,* 9(4), pp. 430-446.

Brickhouse, N.W., 2001. Embodying science: a feminist perspective on learning. *Journal of Research in Science Teaching,* 38(3), pp. 282-295.

Brusselmans-Dehairs, C., Henry, G.F., Beller, M. & Gafni, N., 1997. *Gender differences in learning achievement: Evidence from cross-national surveys*. Educational studies and documents 65. Paris: UNESCO.

Butler, J., 1990. *Gender Trouble: feminism and the subversion of identity*. New York: Routledge.

Casa-Nova, M.J., 2002. *Etnicidade, género e escolaridade. Estudo em torno das socializações familiares de género numa comunidade cigana do Porto*. Lisboa: Instituto de inovação educacional.

Casa-Nova, M.J., 2004. Etnicidade e educação familiar - o caso dos ciganos. *Actas do V Congresso Português de Sociologia. Sociedades Contemporâneas: Reflexividade e Acção*, pp. 94-102.

Chetcuti, D., 2009. Identifying a gender-inclusive pedagogy from Maltese teachers' personal practical knowledge. *International Journal of Science Education*, 31(1), pp. 81-99.

CIDE & Instituto de la Mujer (Centro de Investigación y Documentación Educativa) [Centre for Educational Research and Documentation & Institute for Women (ES)], 2006. *Incorporación y trayectoria de niñas gitanas en la E.S.O.* Colección de estudios Mujeres en la Educación, 9. [pdf] Madrid: CIDE and Instituto de la Mujer. Available at: http://www.gitanos.org/publicaciones/incorporaciongitanaseso/ [Accessed 27 October 2007].

Close, S. & Shiel, G., 2009. Gender and PISA Mathematics: Irish results in context. *European Educational Research Journal*, 8(1), pp. 20-33.

Corrin, C., 1999. Gender and identity in Central and Eastern Europe. In C. Corrin, ed. *Gender and identity in Central and Eastern Europe*. London: Frank Cass, pp. 1-6.

Council of Europe, 2007. *Recommendation of the Committee of Ministers to member states on gender mainstreaming in education*. Recommendation CM/Rec(2007)13 adopted by the Committee of Ministers on 10 October 2007 at the 1006th meeting of the Ministers' Deputies. Available at: https://wcd.coe.int/ViewDoc.jsp?id=1194631&Site=CM&BackColorInternet=9999CC&BackColorIntranet=FFBB55&BackColorLogged=FFAC75 [Accessed 27 October 2009].

Crosato, G., Morandi, F. & Satti, E., 2005. *Gender Stereotypes Overcoming and Equality of Women and Men: Guidelines for New Challenges*. (TAGS project for European Association of Regional and Local Authorities for Lifelong Learning [EARLALL]). Brussels: European Commission.

Danish Ministry of Education, 2009. *Databanken*. [Online] Available at: http://www.eng.uvm.dk/ [Accessed 26 October 2009].

DBO (Dienst Beroepsopleiding) [Vocational Training Service (BEnl)], 2008. *Handboek voor gendercoaching op school*. [pdf] Brussels: DBO. Available at: http://www.ond.vlaanderen.be/dbo/nl/doc/08_GenBaSec_HL_def_sv.pdf [Accessed: 22 October 2009].

DCSF (Department for Children, Schools and Families (UK)), 2007. *Gender and education: the evidence on pupils in England*. [pdf] London: DCSF. Available at: http://www.dcsf.gov.uk/research/data/uploadfiles/RTP01-07.pdf [Accessed: 23 October 2009].

DCSF, 2008. *The Gender Agenda: Interim Report December 2008*. [pdf] London: DCSF. Available at: http://www.teachernet.gov.uk/_doc/13193/gair.pdf [Accessed: 23 October 2009].

DCSF, 2009a. *The National Strategies: Is this a new problem?* [Online] Available at: http://nationalstrategies.standards.dcsf.gov.uk/node/83600 [Accessed: 23 October 2009].

DCSF, 2009b. *The National Strategies: Inclusion: Ethnicity, social class and gender achievement*. [Online] Available at: http://nationalstrategies.standards.dcsf.gov.uk/inclusion/ethnicitysocialclassandgenderachievement [Accessed: 23 October 2009].

De Beauvoir, S., 1953. *The Second Sex*. Translated and edited by H.M. Parshley. London: Jonathan Cape.

Delamont, S. & Duffin, L. eds., 1978. *The nineteenth-century woman: Her cultural and physical world*. London: Croom Helm.

DEPP/DVE (Direction de l'évaluation, de la prospective et de la performance/ Département de la valorisation et de l'édition) [Directorate for Evaluation, Forward Planning and Performance/ Department for Promotion and Publishing (FR)], 2008. *L'état de l'École : 30 indicateurs sur le système éducatif français*. [pdf] Paris: DEPP/DVE. Available at: http://media.education.gouv.fr/file/etat18/17/0/etat18_41170.pdf [Accessed 26 October 2009].

Desprez-Bouanchaud, A., Doolaege, J. & Ruprecht, L., 1987. *Guidelines on gender-neutral language*. Paris: UNESCO.

DfES (Department for Education and Skills (UK)), 2007. *Gender and Education: the evidence on pupils in England*. [pdf] London: Department for Education and Skills. Available at: http://www.dcsf.gov.uk/research/data/uploadfiles/RTP01-07.pdf [Accessed 26 October 2009].

Dore, R., 1976. *The Diploma Disease*. London: Unwin Educational.

Drudy, S., 2008. Professionalism, performativity and care: Whither teacher education for a gendered profession in Europe. In B. Hudson & P. Zgaga, eds. *Teacher education policy in Europe: A voice of higher education institutions*. Umeå: Faculty of Teacher Education, University of Umeå, pp. 43-62.

Duquet, N., Glorieux, I., Laurijssen, I. & van Dorsselaer, Y., 2006. *Wit krijt schrijft beter. De schoolloopbanen van allochtone jongeren in Vlaanderen.* Antwerpen: Garant.

Dutch Ministry of Education, Culture and Science, 2009. *Key figures 2004-2008: Education, culture and science*. [pdf] The Hague: MINOCW. Available at: http://www.minocw.nl/documenten/key%20figures%202004-2008.pdf [Accessed 19 October 2009].

Dweck, C.S. & Sorich, L., 1999. Mastery-oriented thinking. In C. R. Snyder, ed. *Coping.* New York: Oxford University Press, pp. 232-251

EACEA/Eurydice, 2009a. *Key data on education in Europe 2009*. Brussels: EACEA P9 Eurydice.

EACEA/Eurydice, 2009b. *National testing of pupils in Europe: Objectives, organisation and use of results*. Brussels: EACEA P9 Eurydice.

EACEA/Eurydice, 2009c. *Vocational guidance education in full-time compulsory education in Europe*. Brussels: EACEA P9 Eurydice.

Eder, F., 2007. *Das Befinden von Kindern und Jugendlichen in der österreichischen Schule. Befragung 2005.* Bildungsforschung 20, Innsbruck: Studienverlag.

Encyclopædia Britannica Online, 2009. *Coeducation*. [Online] Available at: http://www.britannica.com/EBchecked/topic/124099/coeducation [Accessed 25 June 2009].

Epstein, D. Ellwood, J., Hey, V. & Maw, J., 1998. *Failing boys? Issues in gender and achievement*. Buckingham: Open University Press.

European Commission, 2007a. *Gender equality law in the European Union*. Luxembourg: Office for Official Publications of the European Communities.

European Commission, 2007b. *Gender mainstreaming of employment policies. A comparative review of 30 European countries*. Luxembourg: Office for Official Publications of the European Communities.

European Commission, 2008. *Progress towards the Lisbon objectives in education and training: Indicators and Benchmarks 2008*. Commission staff working document, SEC(2008) 2293.

European Commission, 2009a. *Gender Equality.* [Online] Available at: http://ec.europa.eu/social/main.jsp?langId=en&catId=418 [Accessed 26 October 2009].

European Commission, 2009b. *She Figures 2009: Statistics and Indicators on Gender Equality in Science*. [pdf] Luxembourg: Publications Office of the European Union. Available at: http://ec.europa.eu/research/science-society/document_library/pdf_06/she_figures_2009_en.pdf [Accessed 16 December 2009].

European Commission, 2009c. *Gender and Education (and Employment): Gendered imperatives and their implications for women and men. Lessons from research for policy makers.* [pdf] Brussels: European Commission (Published July 2009). Available at: http://www.nesse.fr/nesse/activities/reports/activities/reports/gender-report-pdf [Accessed 28 October 2009].

Eurostat, 2009. *Statistics: Education and Training.* [Online] Available at: http://epp.eurostat.ec.europa.eu/portal/page/portal/education/data/database [Accessed 26 October 2009].

Eurydice, 2005. *How boys and girls in Europe are finding their way with information and communication technology.* Brussels: Eurydice.

Eurydice, 2006. *Science teaching in schools in Europe*. Brussels: Eurydice.

Eurydice, 2008a. *Higher education governance in Europe*. Brussels: Eurydice.

Eurydice, 2008b. *Levels of autonomy and responsibilities of teachers in Europe*. Brussels: Eurydice.

Fischman, G., 2000. *Imagining teachers: Rethinking gender dynamics in teacher education*. New York: Rowman & Littlefield.

Florin, C. & Nilsson B., 1998. 'Something in the nature of a bloodless revolution…' How new gender relations became gender equality policy in Sweden in the nineteen-sixties and seventies. In: R. Torstendahl, ed. *State Policy and Gender System in Two German States and Sweden 1945-1989*. Lund: Bloms/Lund Press, pp. 11-78.

Fredriksson, U., Holzer, T., McCluskey-Cavin, H. & Taube, K., 2009. Strengths and weaknesses in the Swedish and Swiss education systems: A comparative analysis based on PISA data. *European Educational Research Journal*, 8(1), pp. 54-68

GAC (Ivan Gabal Analysis & Consulting), 2009. *Results of the representative measurement of educational disparities of Roma pupils in elementary schools in Roma neighborhoods in the Czech Republic (Selected findings of a specialized analysis of the Czech elementary schools in 2008).* [pdf] Available at: http://www.gac.cz/documents/nase_prace_vystupy/GAC_Educational_Disparities_of_Roma_Pupils_Summary.pdf [Accessed 27 October 2009].

GEPE-ME & INE (Gabinete de Estatística e Planeamento da Educação – Ministério da Educação & Instituto Nacional de Estatística) [Statistic and Education Planning Office – Ministry of Education & Statistics Portugal], 2009. *50 Anos de Estatísticas da Educação*. Lisboa. Editorial do Ministério da Educação.

Gipps, C. & Murphy, P., 1994. *A fair test: Assessment, achievement and equity*. Buckingham: Open University Press.

Goddard-Spear, M., 1989. Differences between the written work of boys and girls. *British Educational Research Journal*, 15(3), pp. 271-277.

Golombok, S. & Fivush, R., 1994. *Gender development*. Cambridge: Cambridge University Press.

GUS (Główny Urząd Statystyczny) [Polish Central Statistical Office], 2008. *Oświata i wychowanie w roku szkolnym 2007/08* [Education in the school year 2007/2008]. Warszawa: Główny urząd statystyczny.

Halldórsson, A.M. & Ólafsson, R.F., 2009. The Case of Iceland in PISA: girls' educational advantage. *European Educational Research Journal*, 8(1), pp. 34-53

Halsey, A.H., Heath, A.F. & Ridge, J.M., 1980. *Origins and destinations: Family, class and education in modern Britain*. Oxford: Clarendon Press.

Harding, S., 1986. *The science question in feminism*. Ithaca, New York: Cornell University Press.

Haug, K., 2006. Risikogruppe: Jungen. Das männliche Geschlecht ist in stärkerem Maße von Leseschwäche betroffen. In *Lesen in Deutschland – Projekte und Initiativen zur Leseförderung*. [Online] (Published 02 August 2006) Available at: http://www.lesen-in-deutschland.de/html/content.php?object=journal&lid=619 [Accessed 27 October 2009].

Häussler, P. & Hoffmann, L., 1997. *An den Interessen von Jungen und Mädchen orientierter Physikunterricht* [Physics lessons orientated towards the interests of boys and girls]. Kiel: IPN.

Häussler, P. & Hoffmann, L., 1998. *Chancengleichheit für Mädchen im Physikunterricht* [Equality of girls in physics lessons]. [Online] Available at: http://lise.univie.ac.at/artikel/hoffmann.htm [Accessed 26 October 2009].

HEPI (Higher Education Policy Institute (UK)), 2009. *Male and female participation and progression in higher education*. [pdf] Oxford: HEPI. Available at: http://www.hepi.ac.uk/files/41Maleandfemaleparticipation.pdf [Accessed 26 October 2009].

HESA (Higher Education Statistics Agency (UK)), 2009. *Higher education statistics for the UK 2007/08*. Cheltenham: HESA.

Hill Collins, P., 1990. *Black feminist thought*. New York: Routledge.

Hirdman, Y., 1988. The gender system – reflections on the social subordination of women. *Kvinnovetenskaplig tidskrift*. 3.

Humm, M., 1989. *The dictionary of feminist theory*. Hemel Hemstead, UK: Harvester Wheatsheaf.

Hutt, C., 1972. *Males and Females*. Harmondsworth: Penguin.

Hyde, J.S., 2005. The gender similarities hypothesis. *American Psychologist*, 60(6), pp. 581-592.

IFIIE & Instituto de la Mujer (Instituto de Formación del Profesorado, Investigación e Innovación Educativa) [Institute for Teacher Training and Educational Research and Innovation & Institute for Women (ES)], 2009. *Las mujeres en el sistema educativo*. Madrid: IFIIE and Instituto de la Mujer.

IFIIE & Instituto de la Mujer, 2010. *Las mujeres en el sistema educativo II.* Colección de estudios Mujeres en la Educación, 12. Madrid: IFIIE & Instituto de la Mujer [in press].

INS (Institutul Național de Statistică) [National Institute of Statistics (RO)], 2008a. *Învățământul Primar şi Gimnazial la începutul anului şcolar 2007/2008.* Bucureşti: Institutul Național de Statistică.

INS, 2008b. *Învățământul Liceal la începutul anului şcolar 2007/2008*. Bucureşti: Institutul Național de Statistică.

INS, 2008c. *Învățământul Profesional, Postliceal şi de Maiştri la începutul anului şcolar 2007/2008.* Bucureşti: Institutul Național de Statistică.

ISTAT (Istituto nazionale di statistica) [Italian National Institute of Statistics], 2009. [Online] Available at: http://www.istat.it/ [Accessed 27 October 2009].

IZM (Latvijas Republikas Izglītības un zinātnes ministrija) [Latvian Ministry of Education and Science], 2009. *Informatīvais ziņojums par pasākumiem, lai samazinātu skolēnu ar zemiem mācību sasniegumiem daudzumu vispārējā izglītībā.* [doc] Available at: http://izm.izm.gov.lv/upload_file/Normativie_akti/info_zinojumi/IZMZino_260408_sekmiba.doc [Accessed 27 October 2009].

Kaplan, G., 1992. *Contemporary Western European Feminism*. London: Allen & Unwin.

Kinser, A.E., 2004. Negotiating spaces for/through third-wave feminism. *NWSA Journal,* 16(3), pp. 124-153

Kopik, A. ed., 2007. *Sześciolatki w Polsce: raport 2006: diagnoza badanych sfer rozwoju*. Kielce; Bydgoszcz: Wydawnictwo Tekst.

Kruse, A-M., 1992. We have learnt not just to sit back, twiddle our thumbs and let them take over. Single sex settings and the development of a pedagogy for girls and a pedagogy for boys in Danish schools. *Gender and Education*, 4(2), pp. 81-103.

Lafontaine, D. & Monseur, C., 2009. Gender gap in comparative studies of reading comprehension: To what extent do the test characteristics make a difference? *European Educational Research Journal,* 8(1), pp. 69-79.

Lalak, D., 2008. Rodzina i szkoła w systemie wychowania [Family and school in the system of care]. In M. Libiszowska-Żółtowska & K. Ostrowska, eds. *Agresja w szkole. Diagnoza i profilaktyka* [Agression at school. Diagnosis and prevention]. Warszawa: Centrum Doradztwa i Informacji Difin sp.z o. o. [Centre of Counselling and Information].

Livaditis, M., Zaphiriadis, K., Samakouri, M., Tellidou, C. Tzavaras, N. & Xenitidis, K., 2003. Gender differences, family and psychological factors affecting school performance in Greek secondary school students. *Educational Psychology*, 23(2), pp. 223-231.

Lloyd, G. ed., 1996. *'Knitting Progress Unsatisfactory'. Gender and Special Issues in Education*. Edinburgh: Moray House Publications.

Lovenduski, J., 1986. *Women and European politics: Contemporary feminism and public policy*. Brighton: Harvester Press.

Luengo, M.R. & Blázquez, F., 2004. *Género y libros de texto. Un estudio de estereotipos en las imágenes*. Badajoz: Instituto de la Mujer de Extremadura.

Maccoby, E.E. & Jacklin, C.N., 1974. *The psychology of sex differences*. Stanford: Stanford University Press.

Magno, C. & Silova, I., 2007. Teaching in transition; Examining school-based inequities in central/south-eastern Europe and the former Soviet Union. *International Journal of Educational Development*. 27, pp. 647-660.

Maguire, M., 2007. Home-school relations. In K. Myers, H. Taylor, S. Adler & D. Leonard, eds. *Genderwatch: …still watching.* Stoke-On-Trent: Trentham, pp. 62-64.

Martin, M.O. et al., 2000. *TIMSS 1999 International Science Report Findings from IEA's Repeat of the Third International Mathematics and Science Study at the Eighth Grade.* Chestnut Hill, MA: TIMSS & PIRLS International Study Center, Boston College.

Martin, M.O. et al., 2004. *TIMSS 2003 International Science Report: Findings From IEA's Trends in International Mathematics and Science Study at the Fourth and Eighth Grades.* Chestnut Hill, MA: TIMSS & PIRLS International Study Center, Boston College.

Martin, M.O. et al., 2008. *TIMSS 2007 International Science Report: Findings from IEA's Trends in International Mathematics and Science Study at the Fourth and Eighth Grades.* Chestnut Hill, MA: TIMSS & PIRLS International Study Center, Boston College.

MCF/ETNIC (Ministère de la Communauté française de Belgique/ l'Entreprise publique des Technologies nouvelles de l'Information et de la Communication) [Ministry of the French Community of Belgium/ Public Company for New Information and Communication Technologies], 2008. *Les indicateurs de l'enseignement*. [pdf] Available at: http://www.enseignement.be/indicateursenseignement [Accessed 26 October 2009].

McNay, L., 2000. *Gender and Agency: reconfiguring the subject in feminist and social theory*. Cambridge: Polity Press.

Melhuish E., Phan, M.B., Sylva, K., Sammons, P., Siraj-Blatchford, I. & Taggart, B., 2008. Effects of the home learning environment and preschool center experience upon literacy and numeracy development in early primary school. *Journal of Social Issues*, 64(1), pp. 95-114.

Mills, M., Martino, W. & Lingard, B., 2004. Attracting, recruiting and retaining male teachers: Policy issues in the male teacher debate. *British Journal of Sociology of Education,* 25(3), pp. 355-369.

Ministerio de Educación [Ministry of Education (ES)], 2009. *Estadísticas de la educación. Estadísticas de las Enseñanzas no universitarias. Resultados detallados. Curso 2007-2008.* (Published 04 August 2009) [pdf] Available at: http://www.educacion.es/mecd/jsp/plantilla.jsp?id=310&area=estadisticas&contenido=/estadisticas/educativas/eenu/result_det/2007/resultados.html [Accessed 27 October 2009].

Miroiu, M., 2003. *Guidelines for promoting gender equity in higher education in Central and Eastern Europe*. UNESCO Papers on Higher Education, Bucharest: UNESCO-CEPES.

Mullis, I.V.S. et al., 2000a. *Gender Differences in Achievement: IEA's Third International Mathematics and Science Study (TIMSS)*. Chestnut Hill, MA: TIMSS & PIRLS International Study Center, Boston College.

Mullis, I.V.S. et al., 2000b. *TIMSS 1999 International Mathematics Report Findings from IEA's Repeat of the Third International Mathematics and Science Study at the Eighth Grade.* Chestnut Hill, MA: TIMSS & PIRLS International Study Center, Boston College.

Mullis, I.V.S. et al., 2004. *TIMSS 2003 International Mathematics Report: Findings From IEA's Trends in International Mathematics and Science Study at the Fourth and Eighth Grades.* Chestnut Hill, MA: TIMSS & PIRLS International Study Center, Boston College.

Mullis, I.V.S. et al., 2007. *PIRLS 2006 International Report: IEA's Progress in International Reading Literacy Study in Primary schools in 40 Countries.* Chestnut Hill, MA: TIMSS & PIRLS International Study Center.

Mullis, I.V.S. et al., 2008. *TIMSS 2007 International Mathematics Report: Findings from IEA's Trends in International Mathematics and Science Study at the Fourth and Eighth Grades.* Chestnut Hill, MA: TIMSS & PIRLS International Study Center, Boston College.

Myers, K., Taylor, H., Adler, S. & Leonard, D. eds., 2007. *Genderwatch: …still watching.* Stoke-On-Trent: Trentham.

Neimanis, A., 2001. *Gender mainstreaming in practice: A handbook*. UNDP Regional Gender Programme of the United Nations Development Programme's Regional Bureau for Europe and the CIS (UNDP RBEC). New York: UNDP.

Newbigging, A., 2002. *How can education advisors help to achieve the PSA Gender Equality Targets? Guidance sheets for promoting equal benefits for females and males in the education sector*. DFID Education Department. London: DFID.

Nilsen , A.P., 1975. Women in children's literature. In E.S.Maccia, ed. *Women and Education*. New York: C. C. Thomas.

OECD (Organisation for Economic Co-operation and Development), 2001. *Knowledge and skills for life: first results from the OECD Programme for International Student Assessment (PISA) 2000*. Paris: OECD.

OECD, 2002. *Reading for change: performance and engagement across countries: results from PISA 2000.* Paris: OECD.

OECD, 2004. *Learning for Tomorrow's World: First Results from PISA 2003.* Paris: OECD.

OECD, 2005. *Education at a Glance – OECD Indicators 2005.* Paris: OECD.

OECD, 2007a. *PISA 2006: science competencies for tomorrow's world. Volume 1, analysis*. Paris: OECD.

OECD, 2007b. *PISA 2006: science competencies for tomorrow's world. Volume 2, data.* Paris: OECD.

OECD, 2009a. *Equally prepared for life? How 15-yer-old boys and girls perform in school.* Paris: OECD.

OECD, 2009b. *Creating effective teaching and learning environments: First results from TALIS*. Paris: OECD.

Öhrn, E., 1998. Gender and power in school: On girls' open resistance. *Social Psychology of Education,* 1(4), pp. 341-357.

Paechter, C., 1998. *Educating the other: Gender, power and schooling*. London: Falmer Press.

Paechter, C., 2000. *Changing school subjects: Power, gender and the curriculum*. Buckingham: Open University Press.

Papastergiou, M. & Solomonidou, C., 2005. Gender issues in Internet use and favourite Internet activities among Greek high school pupils inside and outside schools. *Computers and Education,* 44(4), pp. 377-393.

Pickering, J., 1997. *Raising boys' achievement*. Stafford: Network Educational Press.

Renninger, A.K., Hidi, A.S. & Krapp, A., 1992. *The role of interest in learning and development*. Hillsdale, N.J.: Erlbaum.

Riley, D., 1988. *Am I That Name? Feminism and the category of 'woman' in history*. Basingstoke: Macmillan.

Sammons, P., 1995. Gender, ethnic and socio-economic differences in attainment and progress: A longitudinal analysis of student achievement over 9 years. *British Educational Research Journal*. 21(4), pp. 465-485.

Sammons, P., Sylva, K., Melhuish, E., Siraj-Blatchford, I., Taggart, B., Hunt, S. & Jelicic, H., 2008. *Effective pre-school and primary education 3-11 project: Influences on children's cognitive and social development in year 6.* Research Brief DCSF-RB048-049, London: Department for Children, Schools and Families.

Scott, J.W., 1988. *Gender and the politics of history*. New York: Columbia University Press.

Scott, S., 2007. Uniform and dress codes. In K. Myers, H. Taylor, S. Adler & D. Leonard, eds. *Genderwatch: …still watching.* Stoke-On-Trent: Trentham, pp. 82-84.

Scottish Government, 2009. *SQA Attainment and School Leaver Qualifications in Scotland: 2007/08.* [Online] (Published March 2009) Available at: http://www.scotland.gov.uk/Publications/2009/03/09154229/13 [Accessed 27 October 2009].

SEED (Scottish Executive Education Department), 2006. *Insight 31: Review of strategies to address gender inequalities in Scottish schools.* [pdf] Edinburg: Scottish Executive Education Department. Available at: http://www.scotland.gov.uk/Resource/Doc/113682/0027627.pdf [Accessed 26 October 2009].

Skelton, C. & Francis, B., 2009. *Feminism and the schooling scandal*. London: Routledge

Skelton, C., 1997. Revisiting gender issues in reading schemes. *Education 3-13 International Journal of Primary, Elementary and Early Years Education*, 25(1), pp. 37-43.

Skelton, C., 2002. The 'feminisation of schooling' or 're-masculinising' primary education? *International Studies in Sociology of Education,* 12(1), pp. 77-96.

Skolverket [Swedish National Agency for Education], 2006a. *Gender differences in goal fulfilment and education choices*. Stockholm: Skolverket.

Skolverket, 2006b. *I enlighet med skolans värdegrund?* Rapport 285. Stockholm: Skolverket.

Skolverket, 2009. *Betyg och studieresultat i gymnasieskolan läsår 2007/08.* [Online] Available at: http://www.skolverket.se/sb/d/1721 [Accessed 27 October 2009].

Smetáčková, I., ed., 2006. *Gender ve Škole: Příručka pro budoucí i současné učitelky a učitele*. [pdf] Prague: Nadace Open Society Fund. Available at: www.osops.cz/download/files/gender1/gvs2-komplet.pdf [Accessed 22 October 2009].

Smithers, A., & Robinson, P., 2006. *The paradox of single-sex and co-educational schooling*. [pdf] Buckingham: Carmichael Press, University of Buckingham. Available at: http://www.buckingham.ac.uk/education/research/ceer/pdfs/hmcsscd.pdf [Accessed 23 October 2009].

Smyth, E. & Darmody, M., 2007. 'Man Enough to Do It'? Girls and non-traditional subjects in lower secondary education, *ESRI Working Papers,* WP198. Available at: http://www.esri.ie/UserFiles/publications/20070711094151/WP198.pdf [Accessed 23 October 2009].

SORS (Statistical Office of the Republic of Slovenia), 2009. *National statistics.* [Online] Available at: http://www.stat.si/eng/drz_stat.asp [Accessed 27 October 2009].

SOU (Statens Offentliga Utredningar) [Swedish Government Official Reports], 2005. *Makt att forma samhället och sitt eget liv - jämställdhetspolitiken mot nya mål*. SOU 2005:66. [pdf] Stockholm: Elanders Gotab AB. Available at: http://www.regeringen.se/sb/d/108/a/47912 [Accessed 22 October 2009].

SOU, 2009. *Flickor och pojkar i skolan: hur jämställt är det?* [pdf] Stockholm: Fritze. Available at: http://www.regeringen.se/content/1/c6/12/94/34/1994d30d.pdf [Accessed 26 October 2009].

Środa, M & Rutkowska, E., 2007. *Gender mainstreaming Poland 2007 report*. Poland: United Nations Development Programme.

State Examinations Commission (IE), 2009. *State examinations statistics.* [Online] Available at: http://www.examinations.ie/ [Accessed 26 May 2009].

Statistics Estonia, 2009. *Statistical Database.* [Online] Available at: http://pub.stat.ee/px-web.2001/dialog/statfile1.asp [Accessed 27 October 2009].

Statistisches Bundesamt Deutschland [Federal Statistical Office Germany], 2009. [Online] Available at: http://www.destatis.de [Accessed 26 October 2009].

Stratigaki, M., 2004. The cooptation of gender concepts in EU policies: The case of 'reconciliation of work and family'. *Social Politics*, 11(1), pp. 30-56.

Strömpl, J., Selg, M., Soo, K. & Šahverdov-Žarkovski, B., 2007. *Eesti teismeliste vägivallatõlgendused*. Sotsiaalministeeriumi toimetised nr 3/2007. EV Sotsiaalministeerium: Tallinn.

Sukhnandan, L., Lee, B. & Kelleher, S., 2000. *An investigation into gender differences in achievement*. Berkshire: NFER.

ŠVIS (Švietimo valdymo informacinė sistema) [Education Management Information System (LT)], 2009. *ITC Švietimo valdymo informacinė sistema*. [Online] Available at: http://www.svis.smm.lt/ [Accessed 19 May 2009].

Tinklin, T., Croxford, L., Ducklin, A. & Frame, B., 2003. Inclusion: A gender perspective*. Policy Futures in Education*, 1(4), pp. 640-652.

Topping, K., Valtin, R., Roller, C., Brozo, W. & Lourdes Dionosos, M., 2003. *Policy and practice implications of the Program for International Student Assessment (PISA) 2000*. Newark, USA: International Reading Association. Available at: http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/1b/31/83.pdf [Accessed 26 October 2009].

Tsouroufli, M., 2002. Gender and teachers' classroom practice in a secondary school in Greece. *Gender and Education*, 14(2), pp. 135-147.

ÚIV (Ústav pro informace ve vzdělávání) [Czech Institute for Information on Education], 2009. *Statistická ročenka školství 2008/2009: Výkonové ukazatele*. Praha: TAURIS.

UNESCO (United Nations Educational, Scientific and Cultural Organization), 2000. *Gender equality and equity: A summary review of UNESCO's accomplishments since the Fourth World Conference on Women (Beijing 1995)*. [pdf] Unit for the Promotion of the Status of Women and Gender Equality, UNESCO. Available at: http://unesdoc.unesco.org/images/0012/001211/121145e.pdf [Accessed 26 October 2009].

UNESCO-UIS (UNESCO Institute for Statistics), 2006. *International Standard Classification of Education. ISCED 1997*. [pdf] Available at: http://www.uis.unesco.org/TEMPLATE/pdf/isced/ISCED_A.pdf [Accessed 26 October 2009].

Van de Gaer, E., Pustjens, H., Van Damme, J. & De Munter, A., 2006. Tracking and the effects of school-related attitudes on the language achievement of boys and girls. *British Journal of Sociology of Education*, 27(3), pp. 293-309.

Vicinus, M. ed., 1972. *Suffer and Be Still: Women in the Victorian Age*. Indiana: Indiana University Press.

VISC (Valsts izglītības satura centrs) [State Education Centre (LV)], 2009. *Valsts pārbaudes darbi 2007/2008. m.g. (norises statistika un rezultātu raksturojums).* [Online] Available at: http://isec.gov.lv/eksameni/statistika/2008/stat2008.shtml [Accessed 27 October 2009].

Vlaams Ministerie van Onderwijs en Vorming [Flemish Ministry of Education and Training], 2009. *Statistisch jaarboek van het Vlaams onderwijs Schooljaar 2007-2008.* Brussel: Vlaamse overheid. Available at: http://www.ond.vlaanderen.be/onderwijsstatistieken/2007-2008/jaarboek0708/default.htm [Accessed 27 October 2009].

VLIR (Vlaamse Interuniversitaire Raad) [Flemish Interuniversity Council], 2008a. *Personeelsstatistieken 2008: Het personeelsbestand aan de Vlaamse universiteiten op 1 Februari 2008 en de personeelsevolutie sinds 1992*. [pdf] Brussels: VLIR. Available at: http://www.vlir.be/media/docs/Personeelsstatistieken/personeelsstatistieken2008-a.pdf [Accessed 29 June 2009].

VLIR, 2008b. *Equality guide. HR instruments for equal opportunities at universities.* [pdf] Brussels: VLIR. Available at: http://www.vlir.be/media/docs/Gelijkekansen/Equality_Guide_Basisboek_EN.pdf [Accessed 19 October 2009].

Walby, S., 1999. The new regulatory state: The social powers of the European Union. *British Journal of Sociology*, 50(1), pp.118-140.

Walby, S., 2005. Gender mainstreaming: Productive tensions in theory and practice. *Social Politics: International Studies in Gender, State & Society*, 12(3), pp. 321-343.

Warrington M., Younger, M. & Bearne, E., 2006. *Raising boys' achievement in primary schools: Towards a holistic approach*. Maidenhead: Open University Press/McGraw Hill.

Weeks, J., 2000. *Making sexuality history*. Cambridge: Polity Press.

Weiner, G. & Berge, B.-M., 2001. *Kön och kunskap* [Sex and Knowledge]. Lund: Studentlitteratur.

Weiner, G., 1994. *Feminisms in education: An introduction*. Buckingham: Open University Press.

Weiner, G., 2002. Uniquely similar or similarly unique? Education and development of teachers in Europe. *Teaching Education*, 13(2), pp. 273-288.

WHO (World Health Organization), 2009. *What do we mean by "sex" and "gender"?* [Online] Available at: http://www.who.int/gender/whatisgender/en/index.html [Accessed 28 October 2009].

Wienholz, M., 2008. Und wo bleiben die Jungs - Jungen gezielt fördern - für viele Schulen noch ein ungewohntes Thema! *Schulverwaltung Bayern,* 12, pp. 325-328.

Wiliam, D., 2000. Assessment: social justice and social consequences: review essay. *British Educational Research Journal*, 26(5), pp. 661-663.

Willingham, W. S., & Cole, N. S. eds., 1997. *Gender and fair assessment*. Mahwah, NJ: Lawrence Erlbaum Associates.

Wood, R., 1987. *Assessment and equal opportunities* [Public lecture], University of London, Institute of Education, 11 November.

Yates, L. & Leder, G., 1996. *Student Pathways: a review and overview of national databases on gender equity*. Tungeranong, Australia: Commonwealth Department of Employment, Education and Training.

Younger, M. & Warrington, M., 2007. Single-sex classes in co-educational schools. In K. Myers, H. Taylor, S. Adler & D. Leonard, eds. *Genderwatch: …still watching.* Stoke-On-Trent: Trentham, pp. 144-147.

Zaborskis, A., Cirtautienė, L. & Žemaitienė, N., 2005. Moksleivių patyčios Lietuvos mokyklose 1994-2002 m [Pupils' sneering at Lithuanian schools in 1994-2002]. *Medicina,* 41(7), pp. 614-620.

Zamfir, C., Mărginean, I., Cace, S., Ilie, S., Surdu, M., Voicu, M., Şerban, M. & Dan, A., 2002. *Indicatori privind comunitățile de rromi din România* [Indicators as regards roma communities from Romania]. Bucureşti: Editura Expert.

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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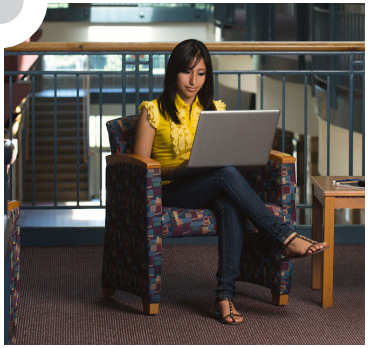
Texas Woman's University Distance Education

Snapshot Report
Fall 2015

TLT
TEACHING & LEARNING with Technology



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Texas Woman's University

Distance Education Summary Report
Fall 2015

General Information

Degrees Offered Electronically

College of Arts and Sciences

- Executive Master of Business Administration
- Master of Arts in Drama
- Bachelor of General Studies (degree completion)
- Bachelor of Business Administration in Human Resource Management (degree completion)
- Bachelor of Business Administration in Marketing (degree completion)
- Bachelor of Business Administration in Management (degree completion)
- Bachelor of Science in Sociology (degree completion
- Bachelor of Science in Criminal Justice (degree completion)

College of Health Sciences

- Master of Health Care Administration
- Master of Science in Speech-Language Pathology
- Master of Science in Education of the Deaf
- Doctor of Philosophy in Occupational Therapy
- Doctor of Occupational Therapy (OTD)
- COTA to Master of Occupational Therapy
- Master of Science in Food Systems Administration
- Master of Science in Nutrition
- Master of Science in Kinesiology
  - Coaching (all areas) Emphasis
  - Sport Management Emphasis
- Master of Science in Health Studies
- Bachelor of Science in Health Studies (degree completion)
- Bachelor of Applied Science in Health Studies (degree completion)
- RDH to Bachelor of Science in Dental Hygiene (degree completion)

College of Nursing

- Doctor of Philosophy in Nursing Science
- Doctor of Nursing Practice
- Master of Science in Nursing-Nursing Education
- Master of Science in Nursing – Health Systems Management
- RN to Bachelor of Science in Nursing (degree completion)

College of Professional Education

- Master of Library Science
- Master of Arts in Administration (Teacher Education)
- Master of Arts in Library Science
- Master of Science in Family Studies
- Master of Arts in Teaching
- Master of Education in Administration
- Master of Education in Reading Education
- Master of Education in Special Education

Certificates

- Certificate in Advanced Geriatric Physical Therapy
- Certificate in Interprofessional Informatics
- Certificate of Leadership in Education and Sport
- Courses toward Certification in Family and Consumer Sciences
- Graduate Certificate in School Librarianship
- Graduate Certificate in Evidence-Based Health Science Librarianship

Distance Education Courses Offered

	Fall 2014	Fall 2015
Unique distance learning courses	371	382
Distance learning sections	808	826

Distance Education Student Facts

	Fall 2014		Fall 2015	
Total students enrolled	8533	100.0%	8659	100.0%
Students in DE courses only	3834	44.9%	3811	44.0%
Students in DE/F2F Combo	4699	55.1%	4848	56.0%

Ethnicity

	Fall 2014		Fall 2015	
Caucasian	3855	45.2%	3724	43.0%
African American	1980	23.2%	1962	22.7%
Hispanic	1587	18.6%	1740	20.1%
Asian American	705	8.3%	751	8.7%
American Indian/Alaskan	119	1.4%	122	1.4%
International	145	1.7%	147	1.7%
Other	142	1.6%	213	2.4%

Gender

	Fall 2014		Fall 2015	
Female	7677	90.0%	7775	89.8%
Male	856	10.0%	880	10.2%
Not Reported	0	0.0%	4	0.0%

Academic level by instructional method

	Fall 2014	Fall 2015
Graduate-DE Only	2342	2312
Graduate-DE/F2F	1049	936
Undergraduate-DE Only	1492	1499
Undergraduate-DE/F2F	3650	3912

Age—students in distance education courses only

	Fall 2014	Fall 2015
21 & under	150	163
22-30	1458	1511
31-40	1197	1150
41-50	747	718
51+	282	269

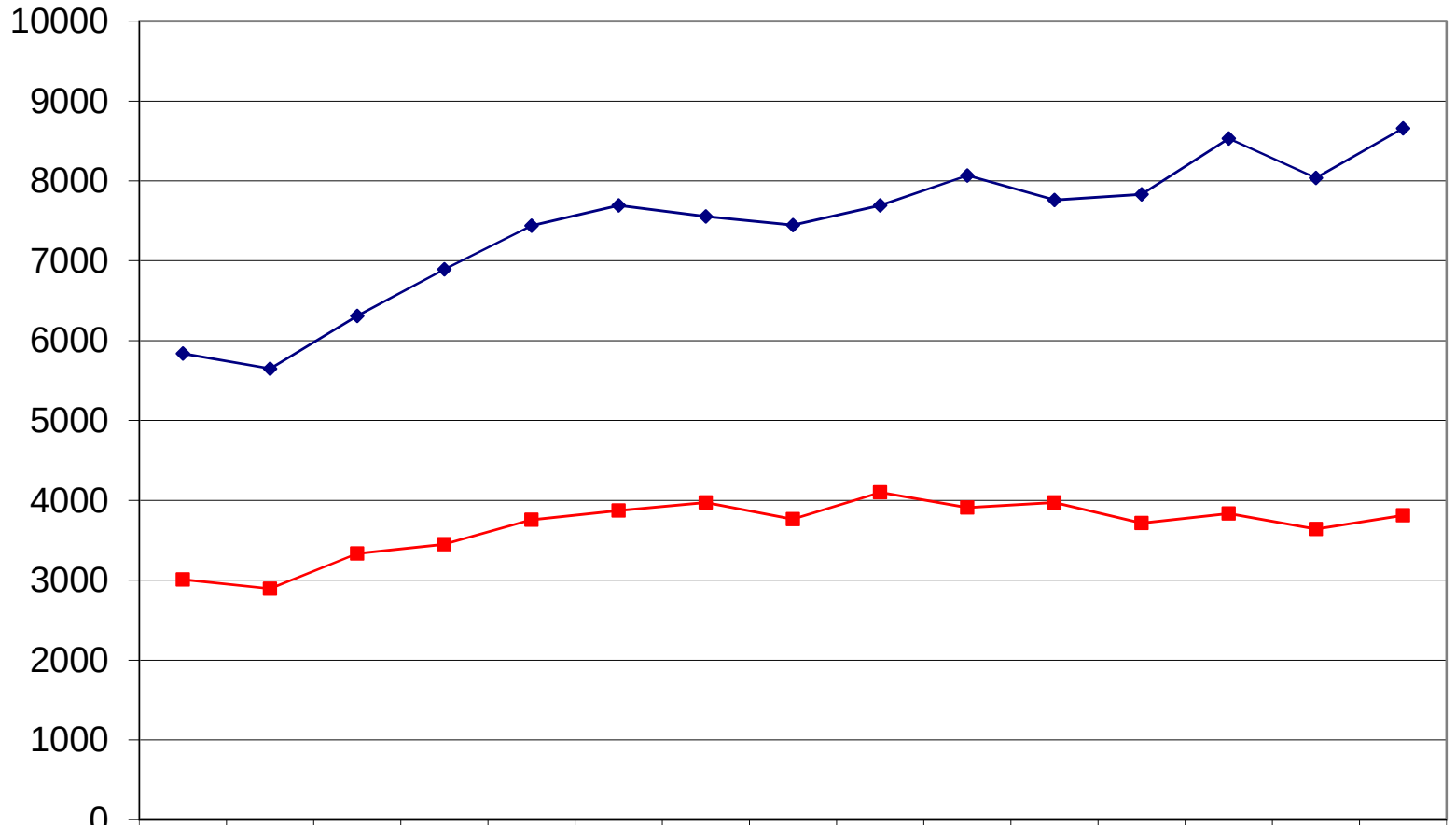
Age—students taking combination of DE and face-to-face courses

	Fall 2014	Fall 2015
21 & under	1731	1908
22-30	1966	2033
31-40	616	568
41-50	271	244
51+	115	95

Location (Fall 2015)

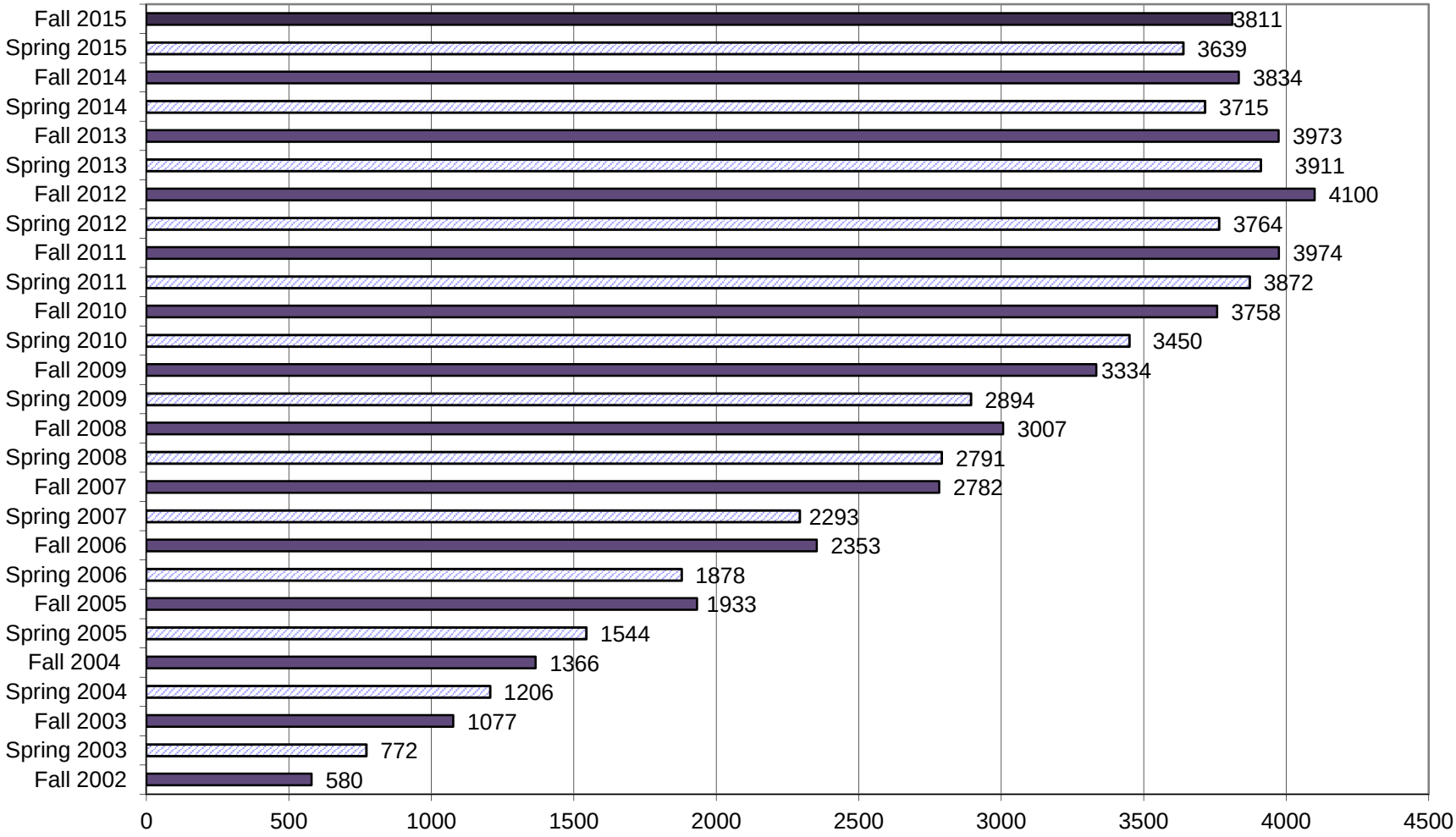
Texas	DE Only Students	DE/F2F Students
Alamo Region	68	32
Capital Region	83	52
Central Texas Region	55	47
Coastal Bend Region	24	5
Gulf Coast Region	778	433
High Plains	18	5
Metroplex	2410	4047
Northwest Texas Region	28	35
South Texas Border	42	29
Southeast Texas Region	14	10
Texas Panhandle	0	0
Upper East Texas Region	57	81
Upper Rio Grande Region	19	7
West Texas	19	6
Out-of-State	189	59
Out-of-Country	7	0

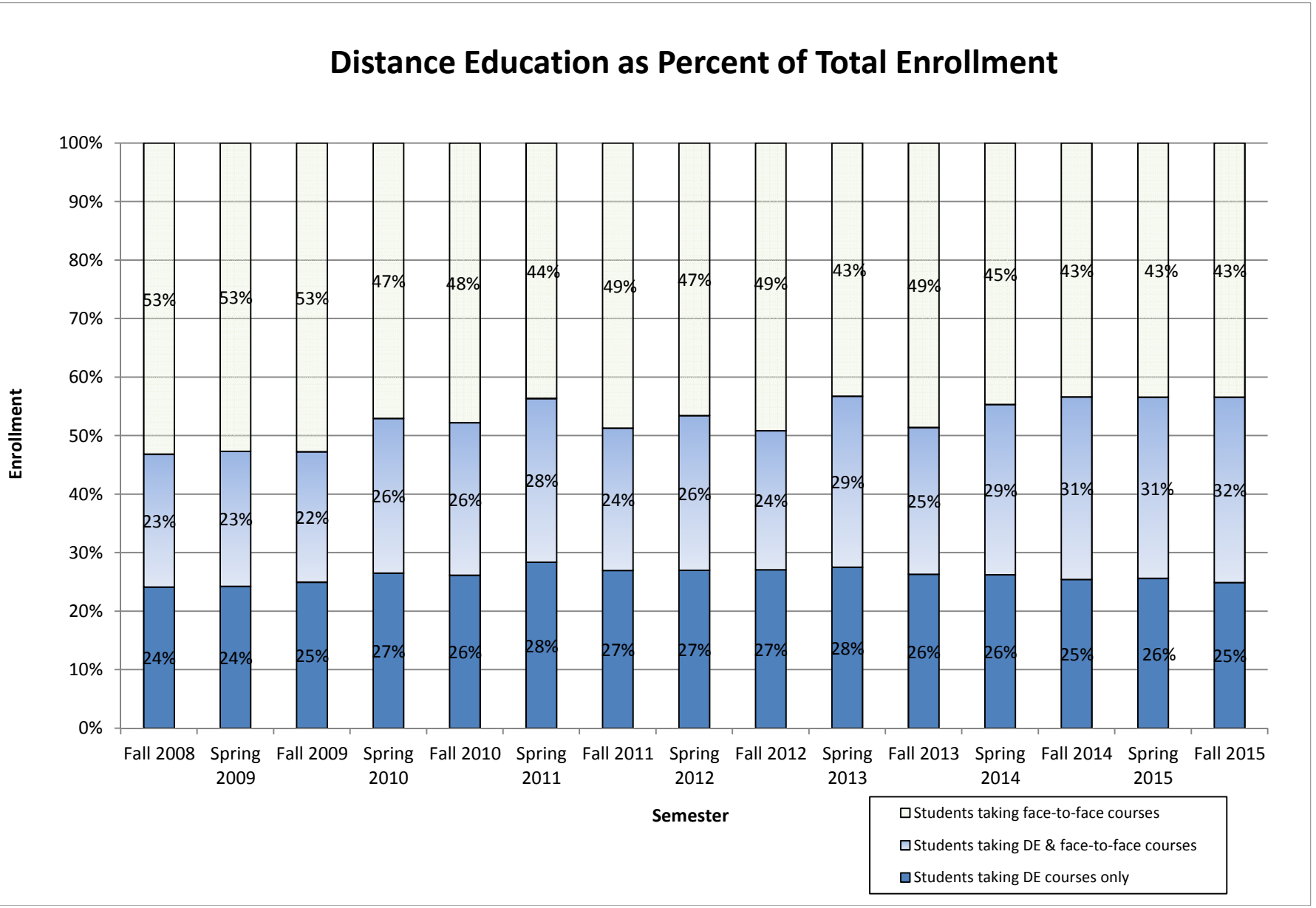
Texas Woman's University
Distance Education Growth



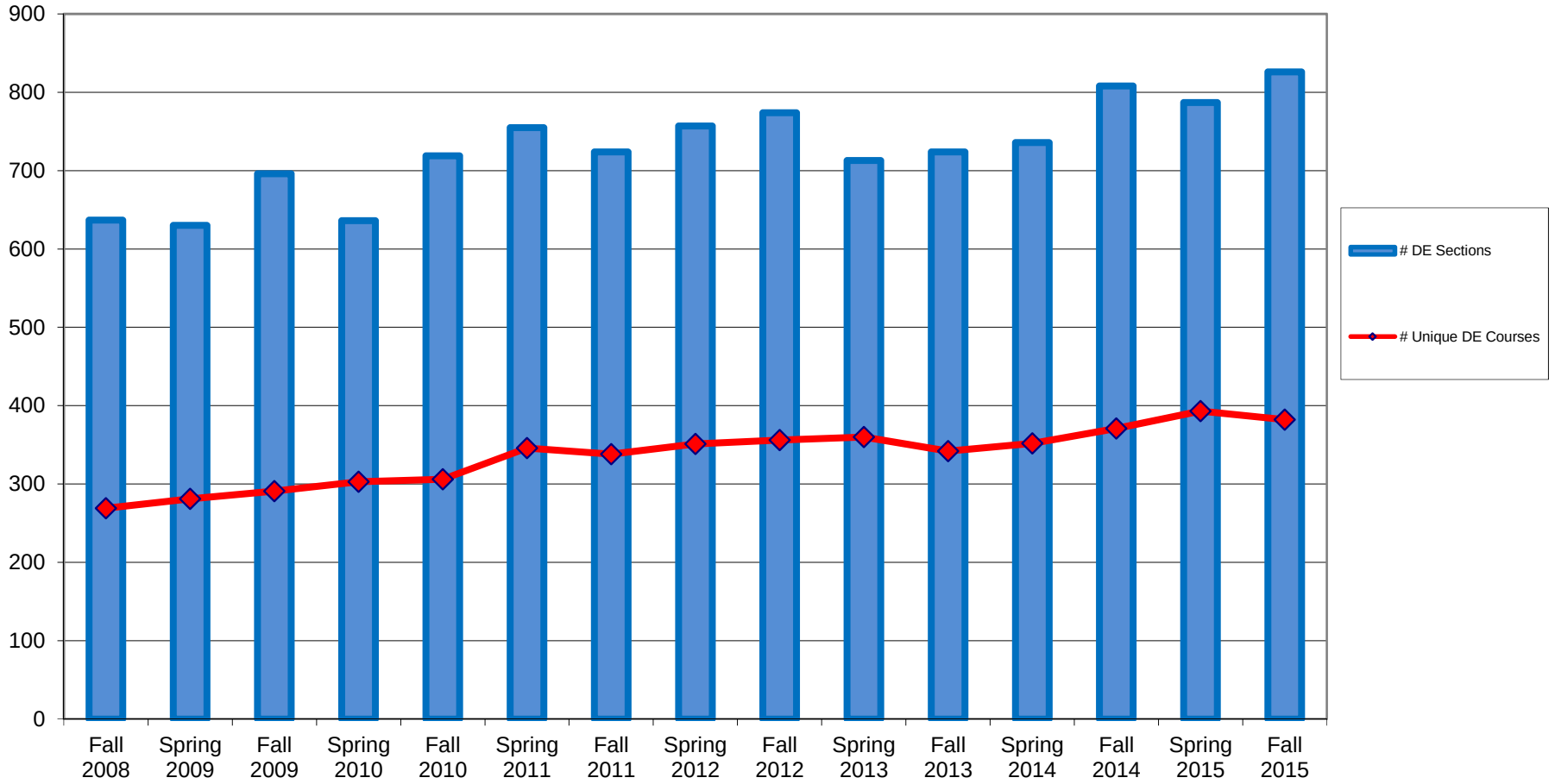
	Fall 2008	Spring 2009	Fall 2009	Spring 2010	Fall 2010	Spring 2011	Fall 2011	Spring 2012	Fall 2012	Spring 2013	Fall 2013	Spring 2014	Fall 2014	Spring 2015	Fall 2015
Students Taking DE Classes	5838	5649	6309	6892	7439	7695	7557	7447	7694	8068	7761	7832	8533	8039	8659
Students Taking Only DE Classes	3007	2894	3334	3450	3758	3872	3974	3764	4100	3911	3973	3715	3834	3639	3811

Students Taking Distance Education Classes Only

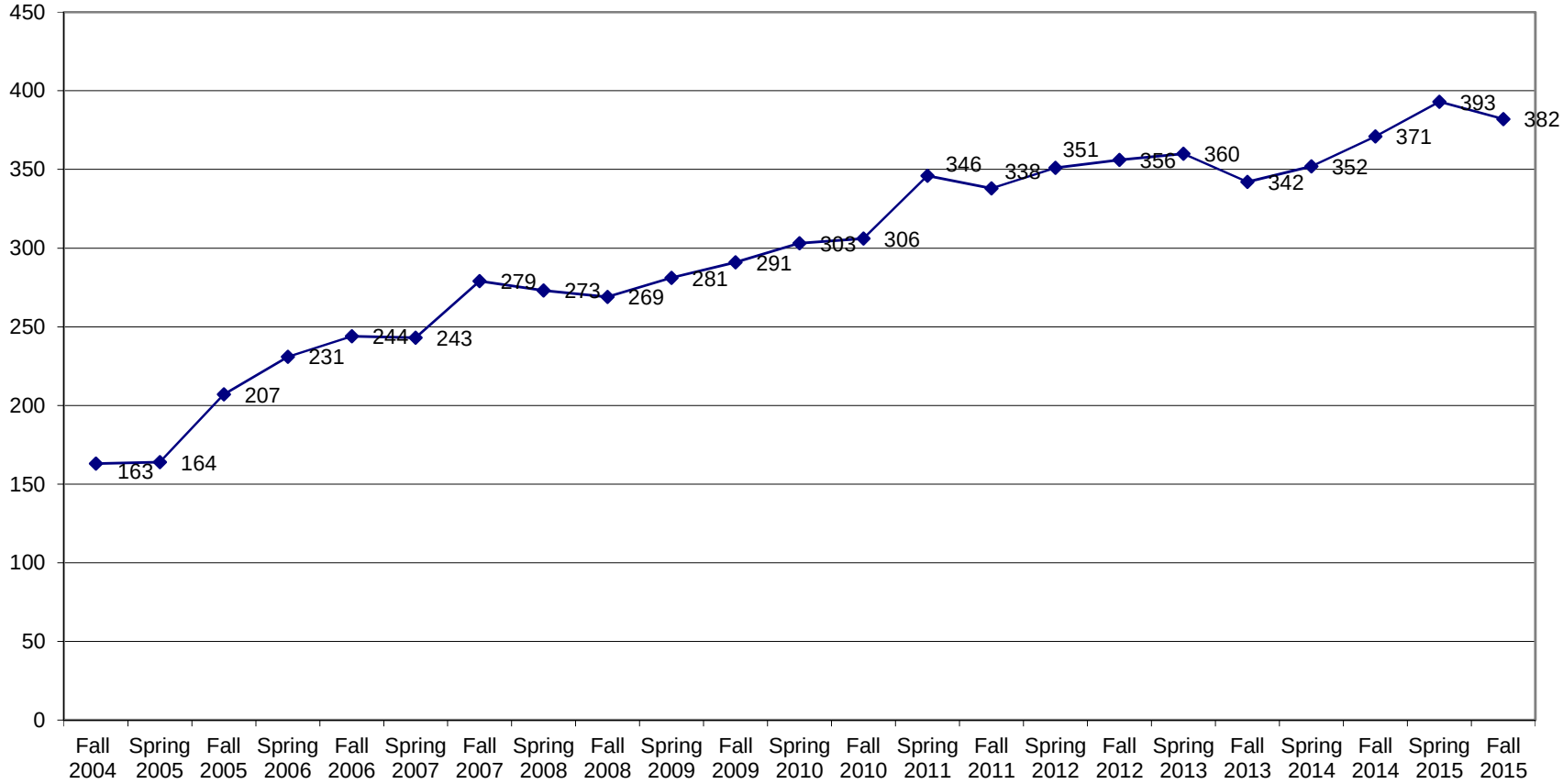



Distance Education as Percent of Total Enrollment
Enrollment
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Fall 2008
Spring 2009
Fall 2009
Spring 2010
Fall 2010
Spring 2011
Fall 2011
Spring 2012
Fall 2012
Spring 2013
Fall 2013
Spring 2014
Fall 2014
Spring 2015
Fall 2015
53% 53% 53% 47% 48% 44% 49% 47% 49% 43% 49% 45% 43% 43% 43%
23% 23% 22% 26% 26% 28% 24% 26% 24% 29% 25% 29% 31% 31% 32%
24% 24% 25% 27% 26% 28% 27% 27% 27% 28% 26% 26% 25% 26% 25%
Semester
Students taking face-to-face courses
Students taking DE & face-to-face courses
Students taking DE courses only

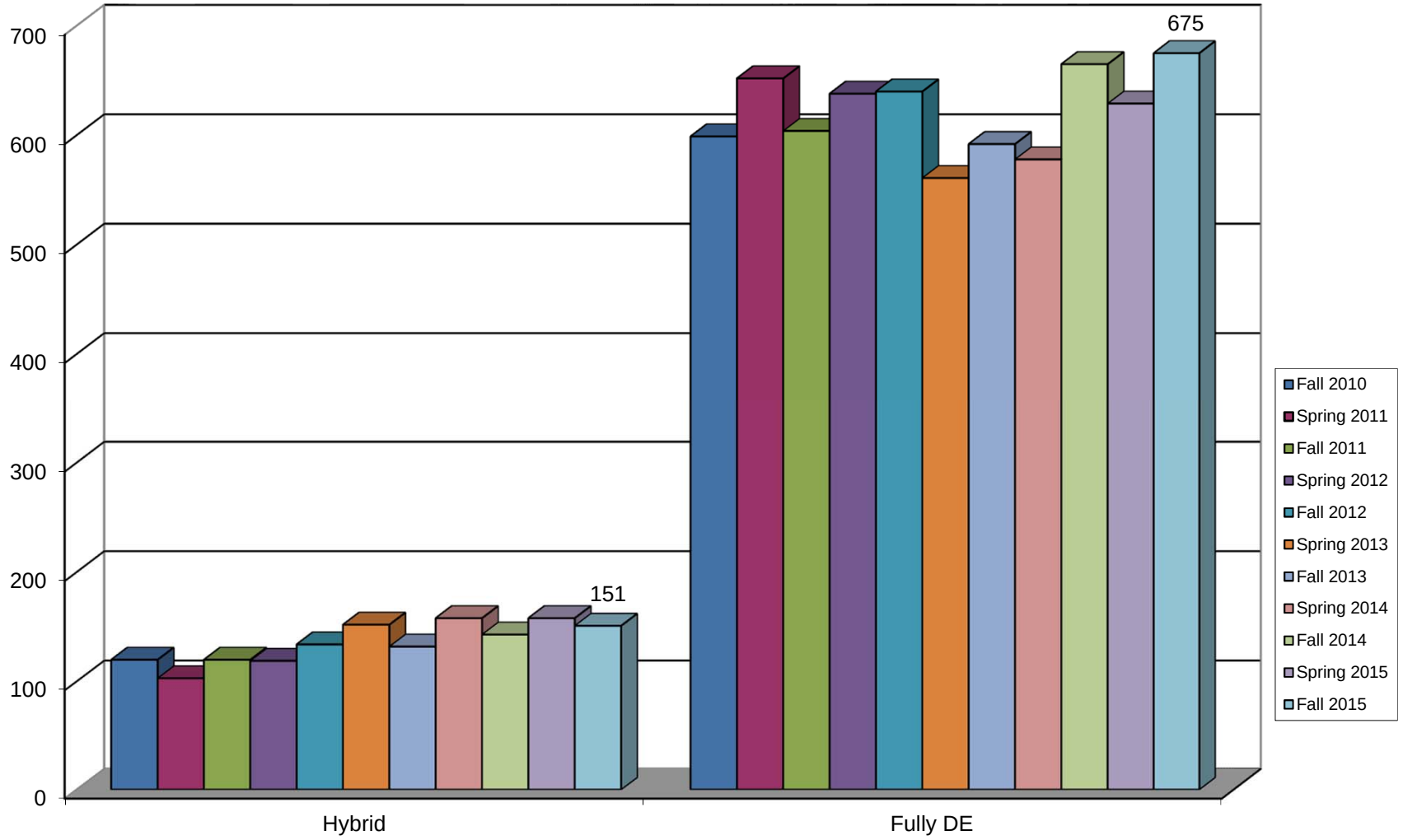
Distance Education Courses and Sections



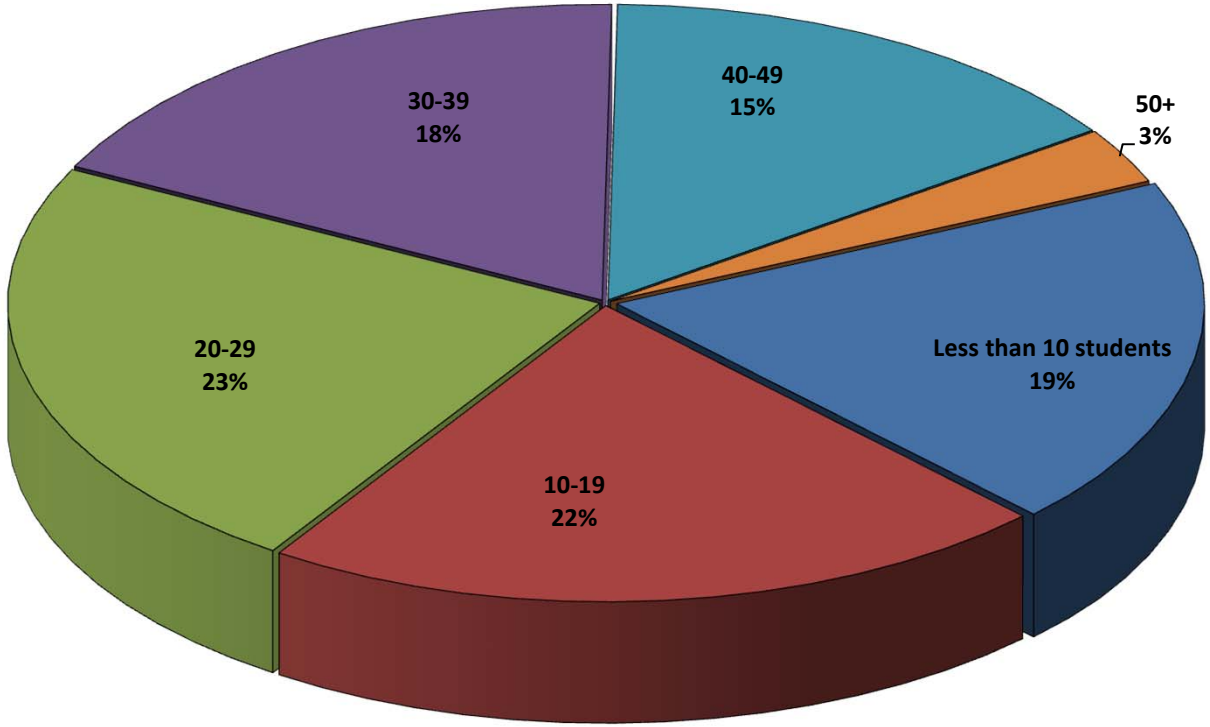
Number of Unique Distance Education Courses at TWU



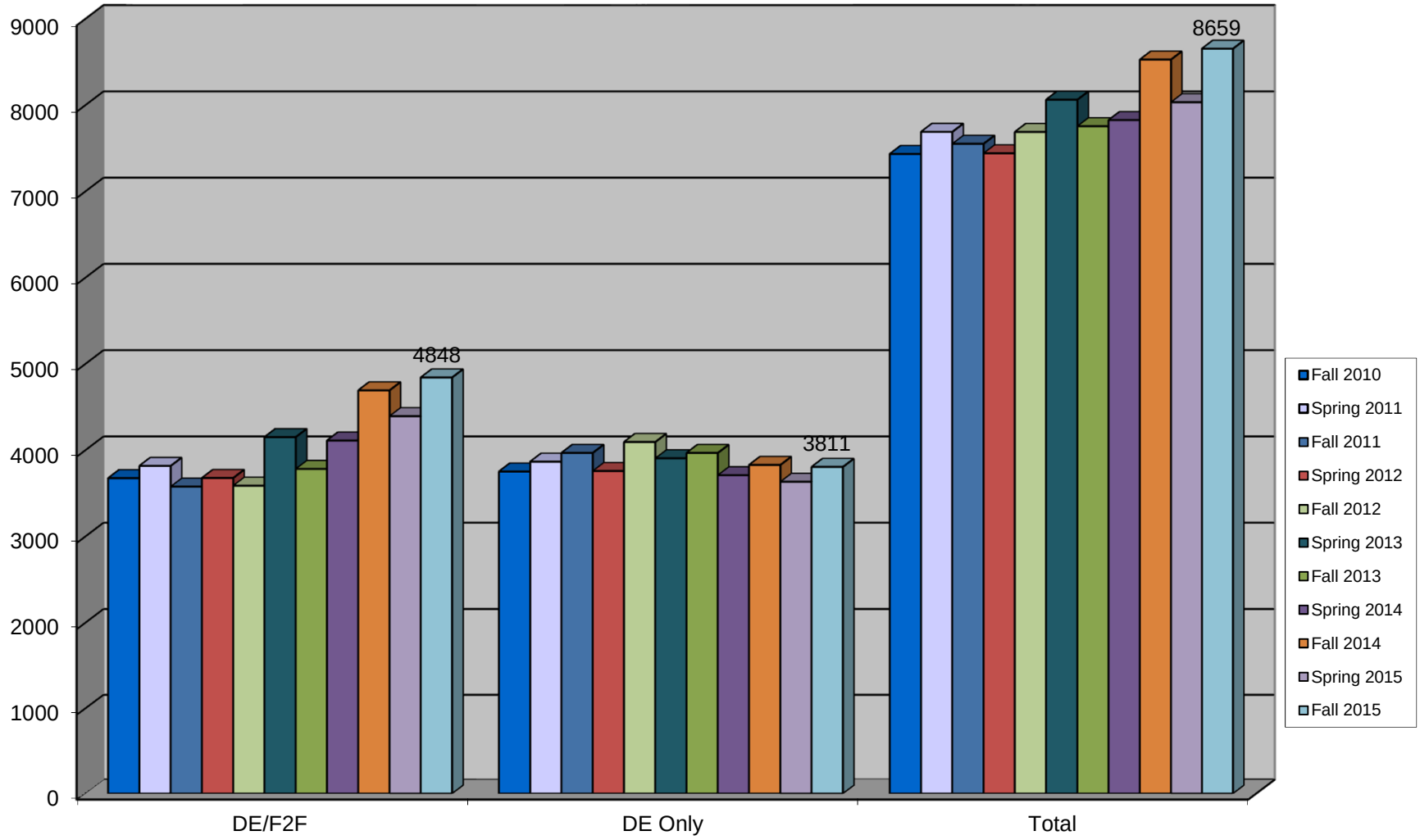
Distance Education Sections by THECB Classifications



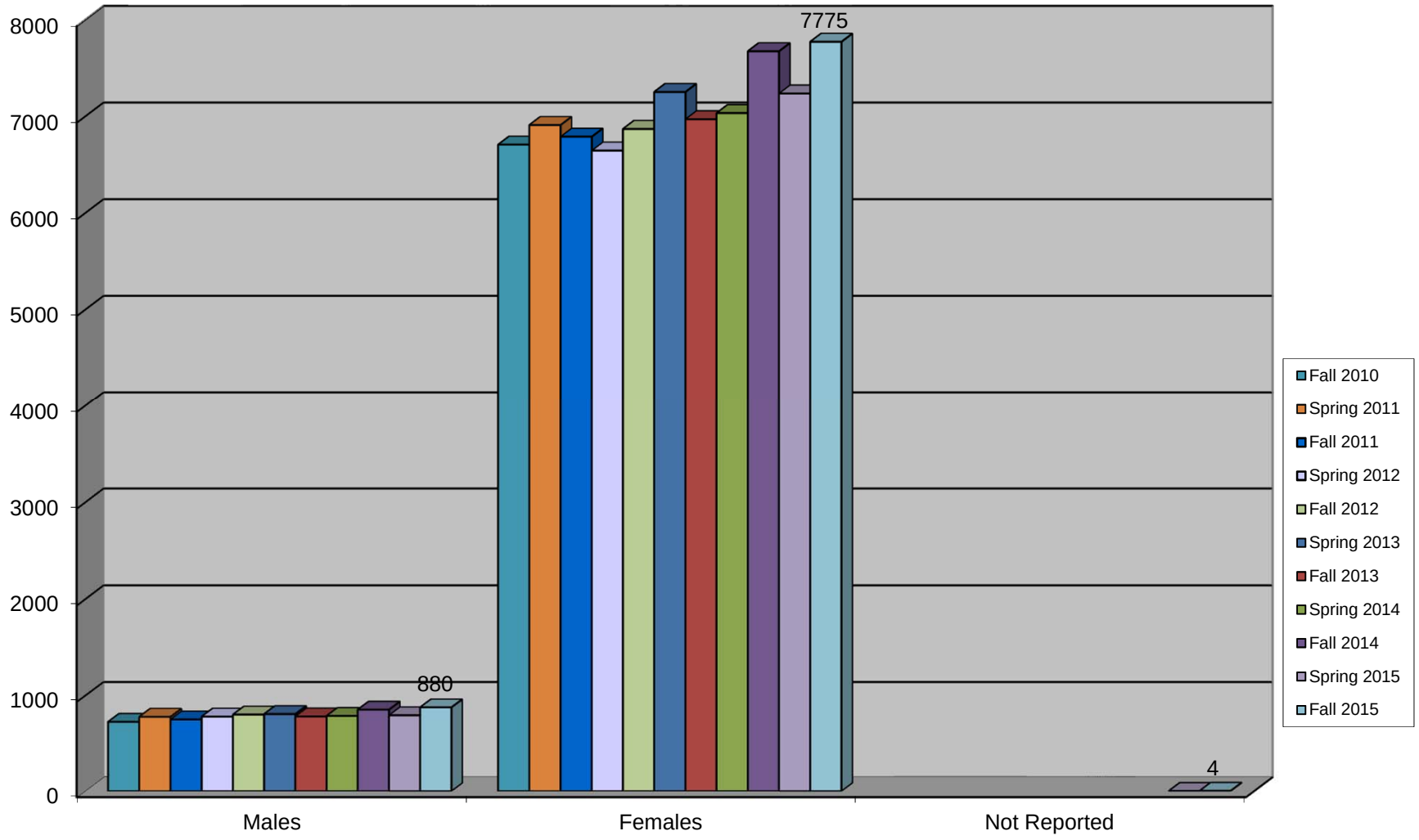
Distance Education Section Size
Fall 2015



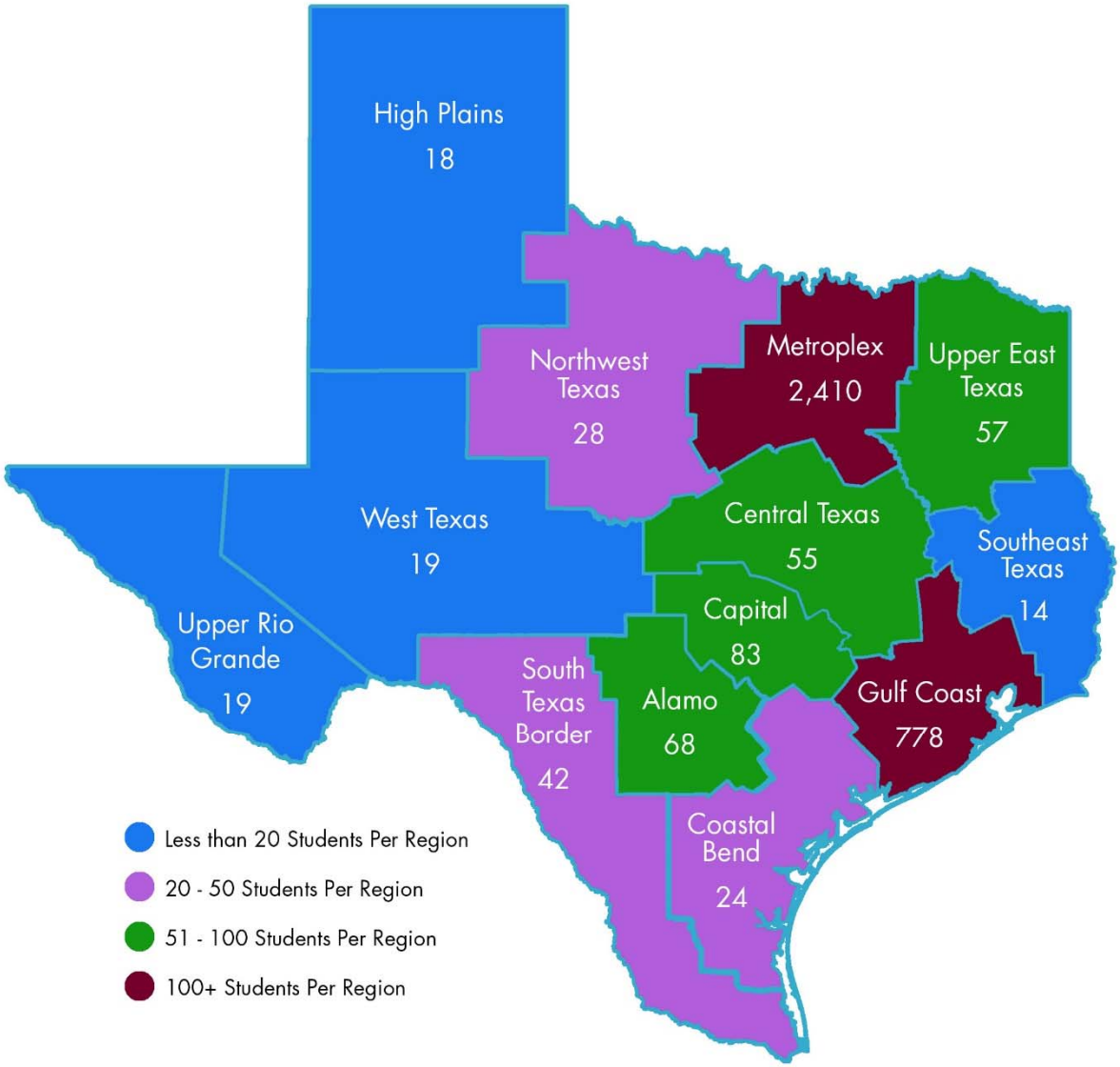
Distance Education Enrollment by Instructional Method



Distance Education Enrollment by Gender

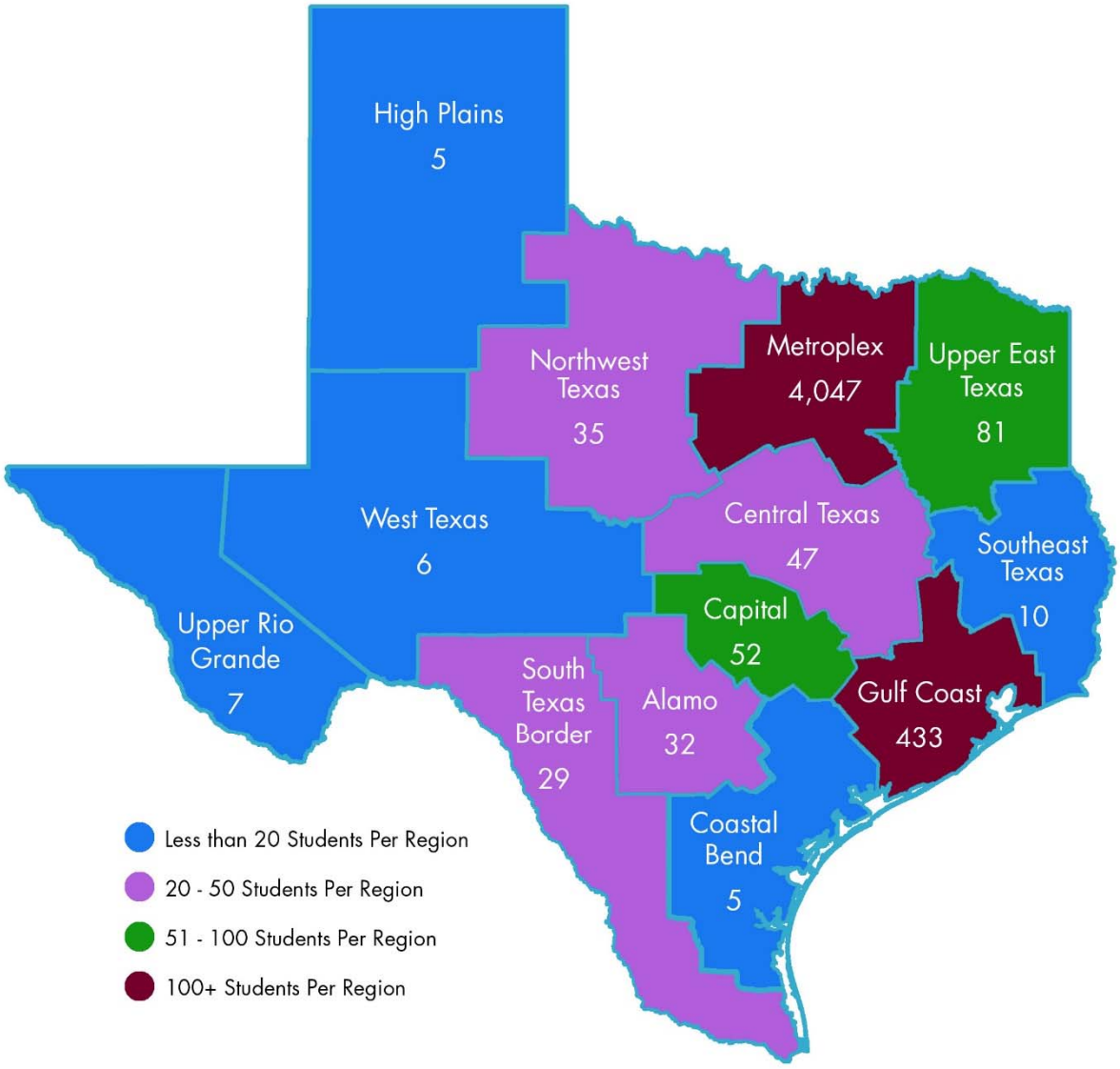


Student Enrollment by Region
Distance Education Only Students



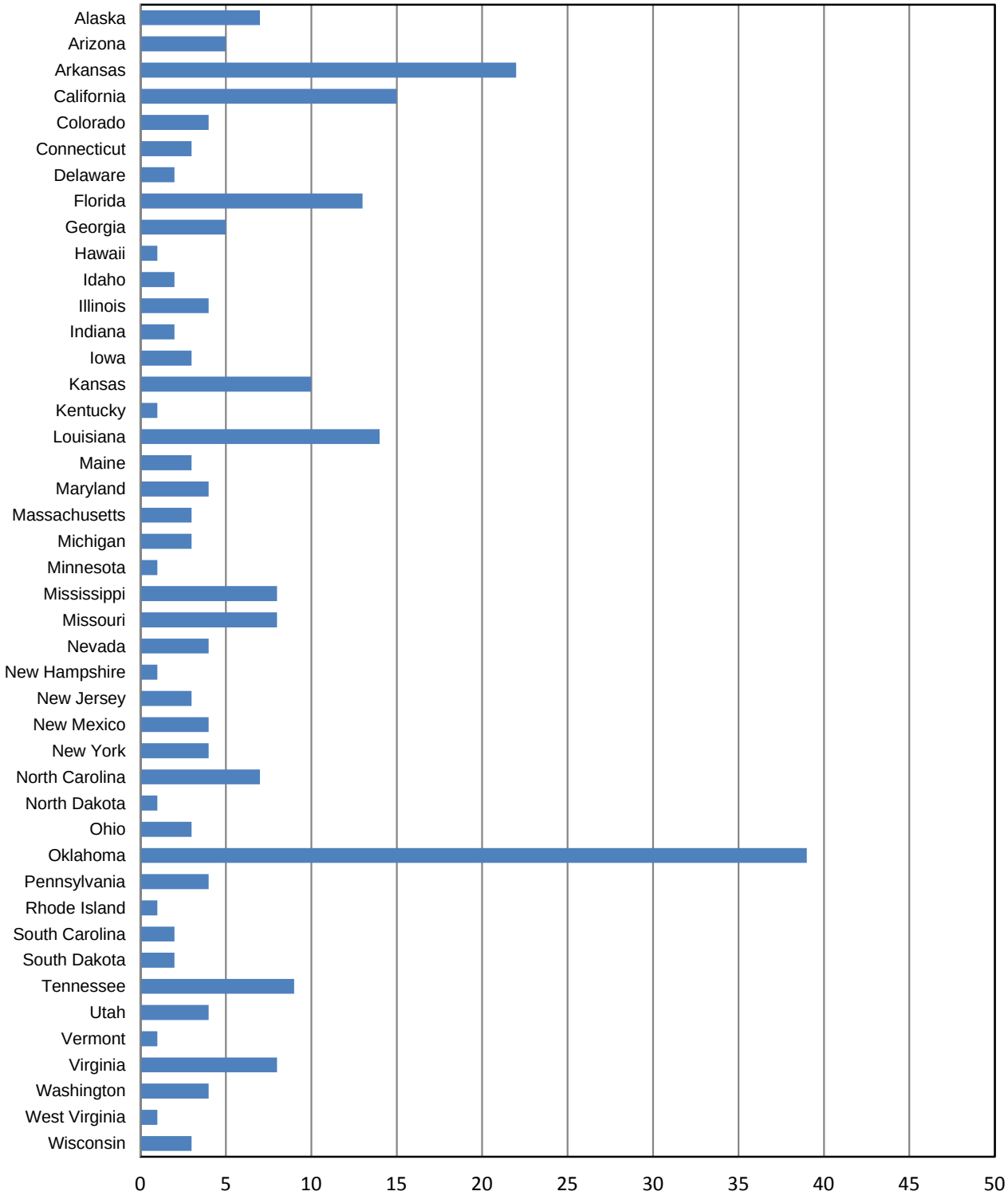
TWU Office of Teaching and Learning with Technology
Fall 2015

Student Enrollment by Region
Distance Education/Face-to-Face Students

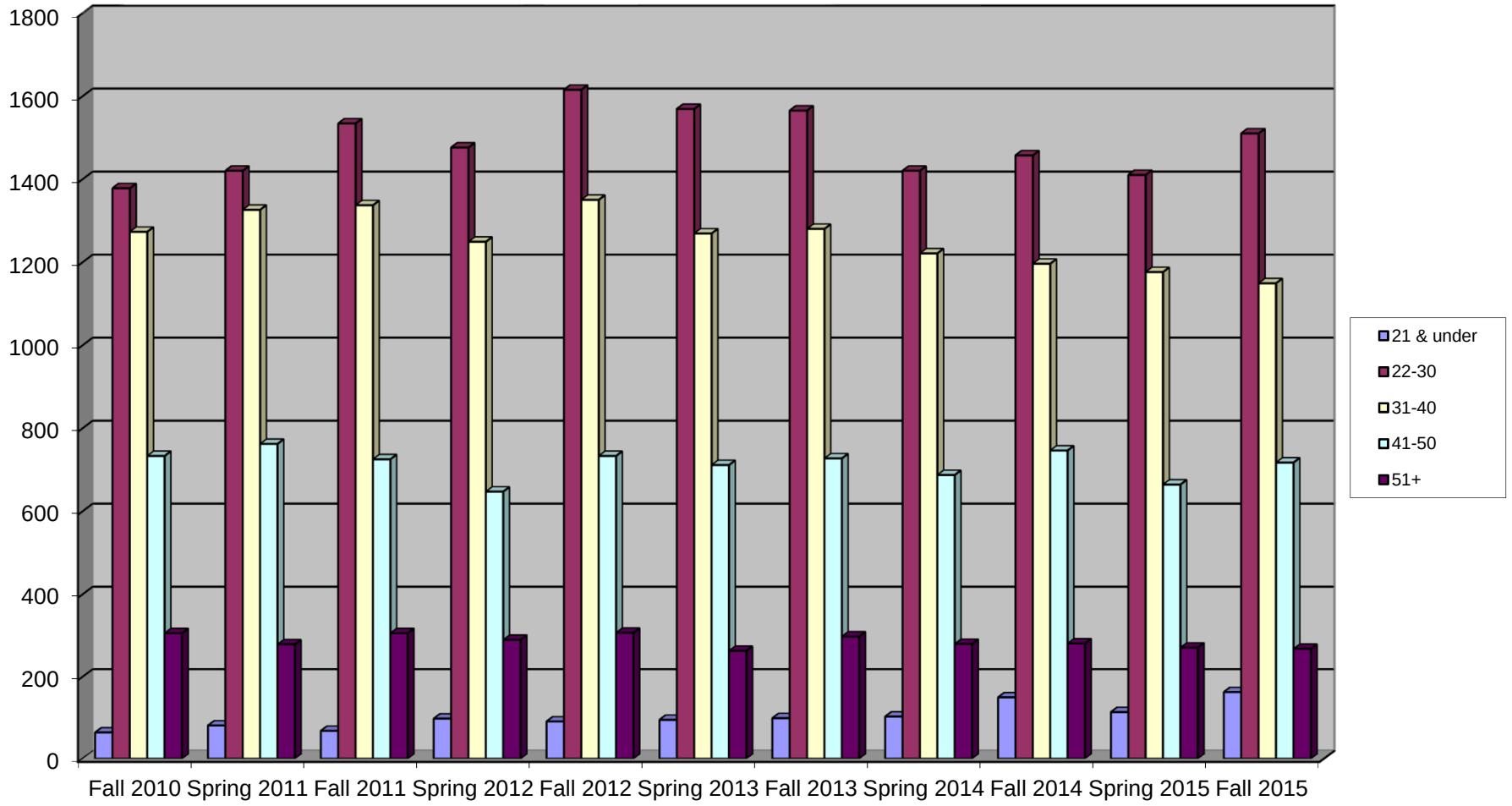


TWU Office of Teaching and Learning with Technology
Fall 2015

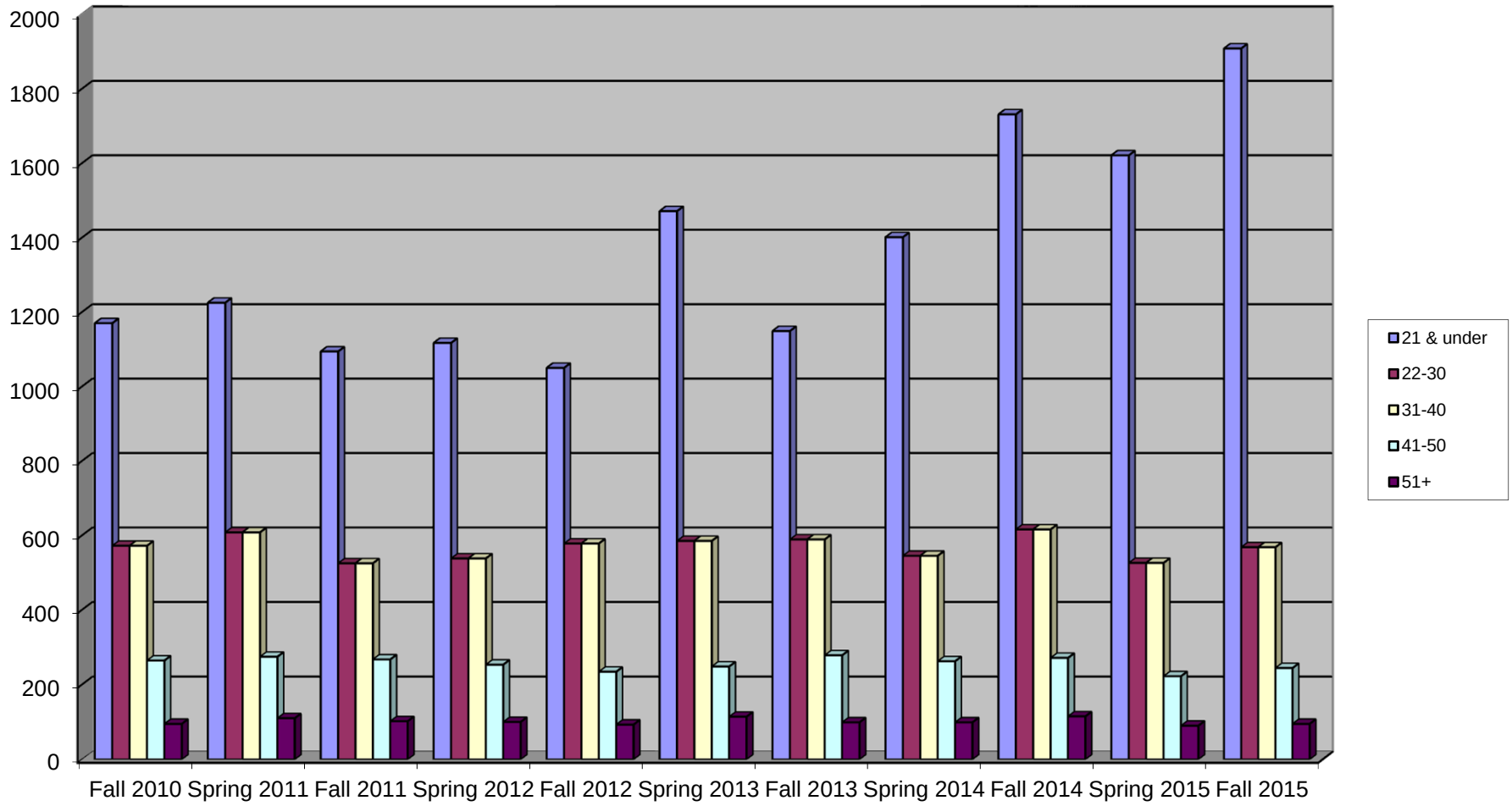
Location of Out-of-State Students Taking DE Courses N=248



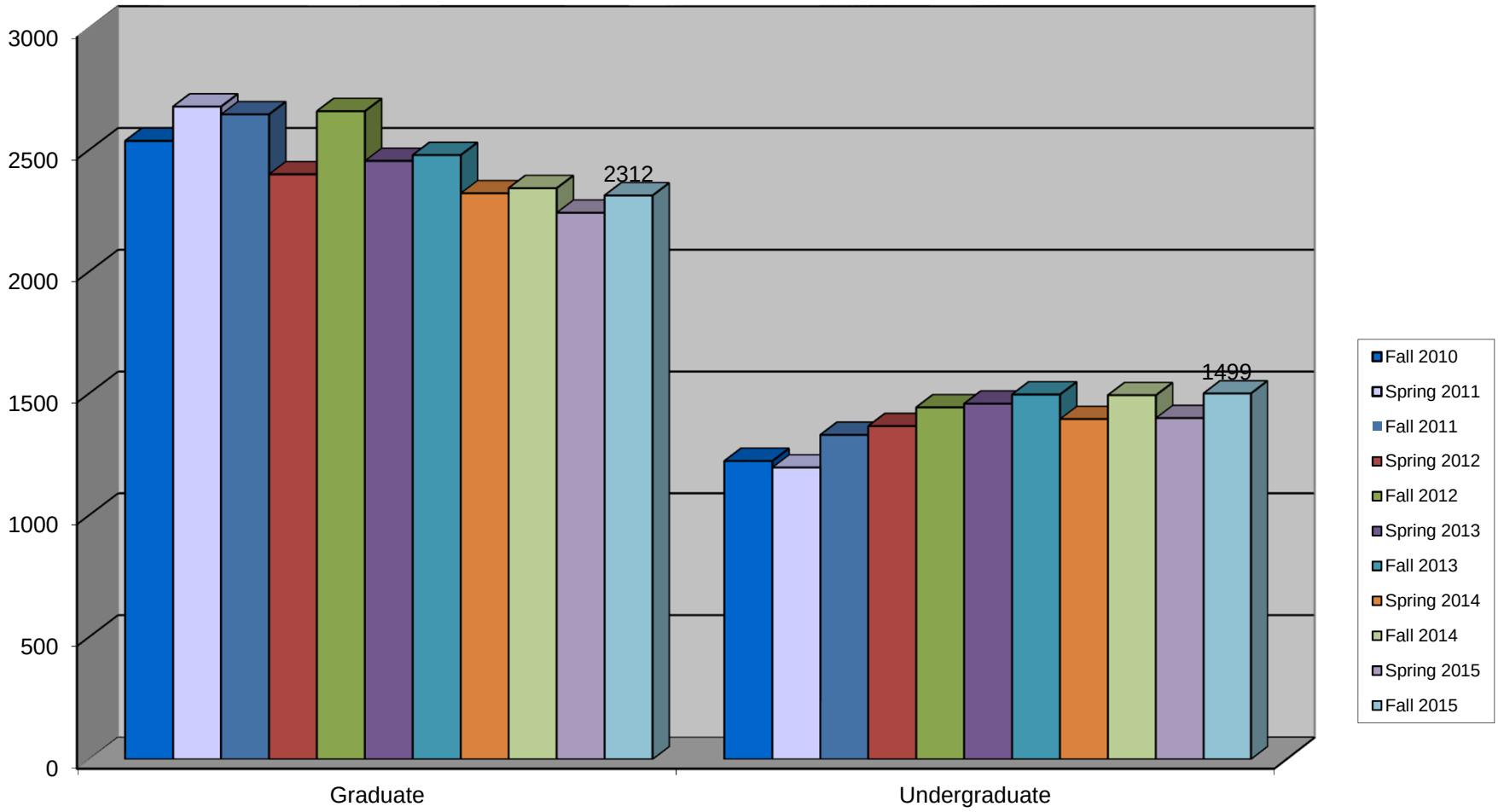
Student Enrollment by Age Range
Distance Education Only Students



Student Enrollment by Age Range
Distance Education/Face-to-Face Students

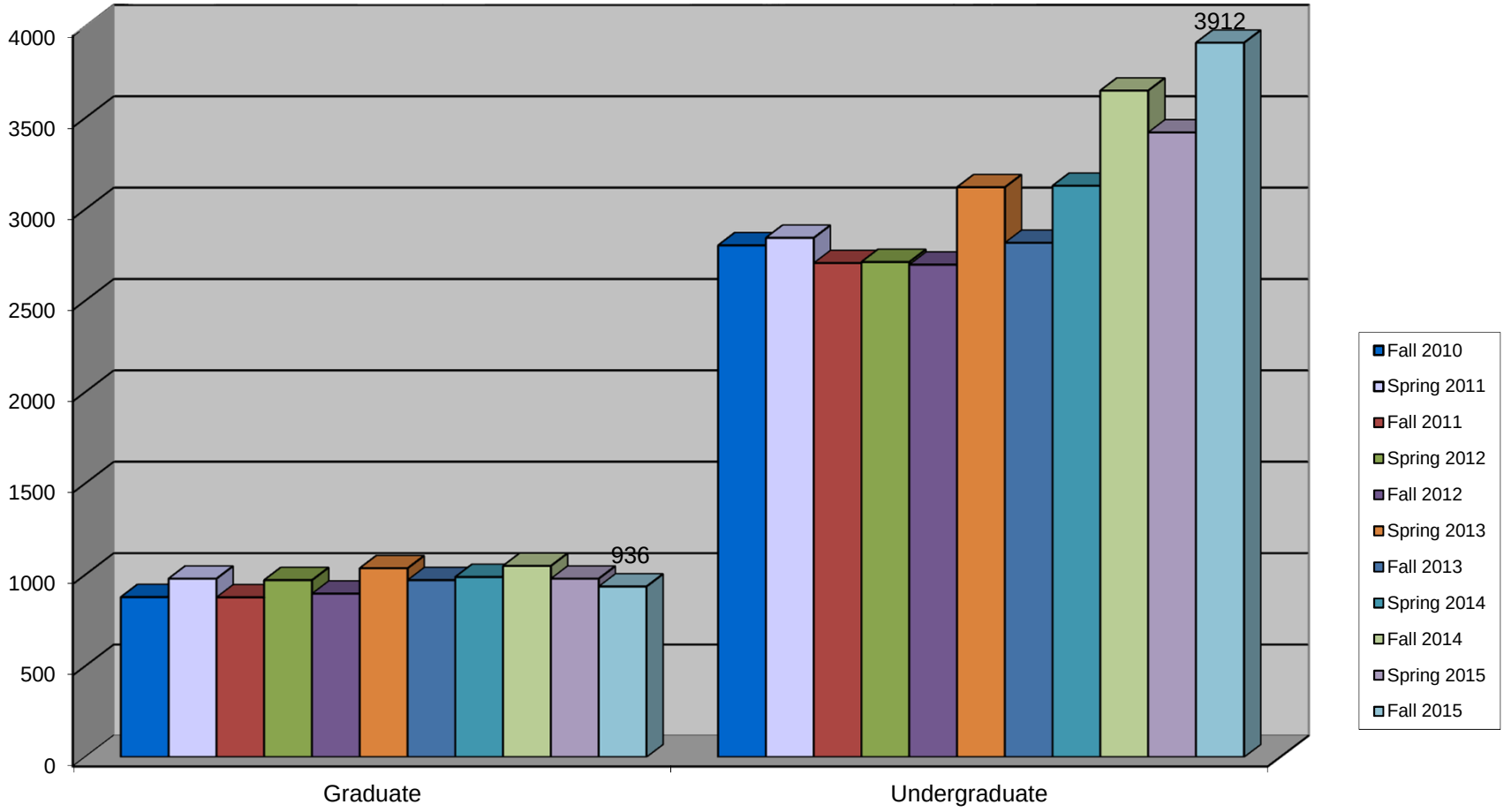


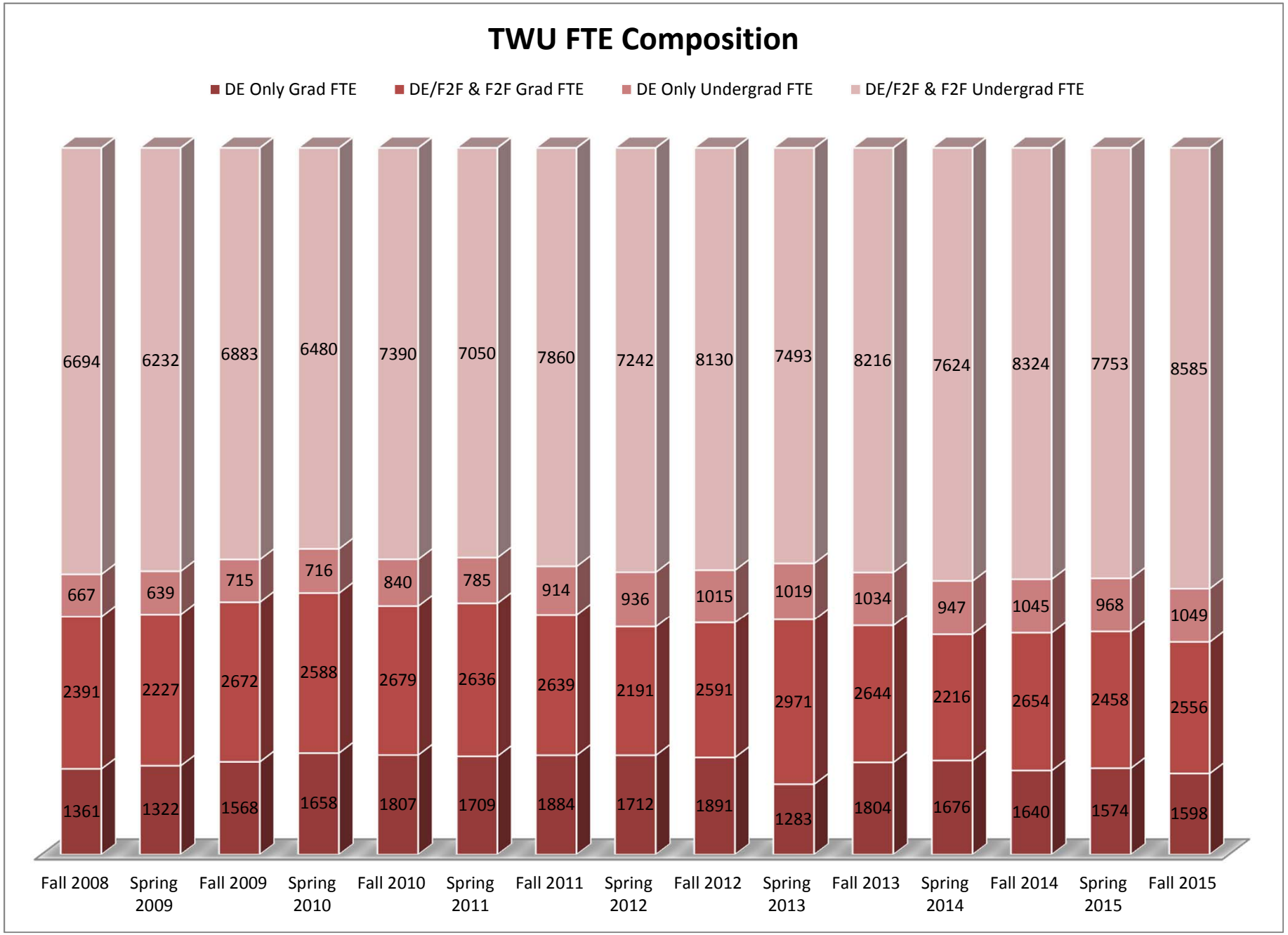
Student Enrollment by Academic Level
Distance Education Only Students

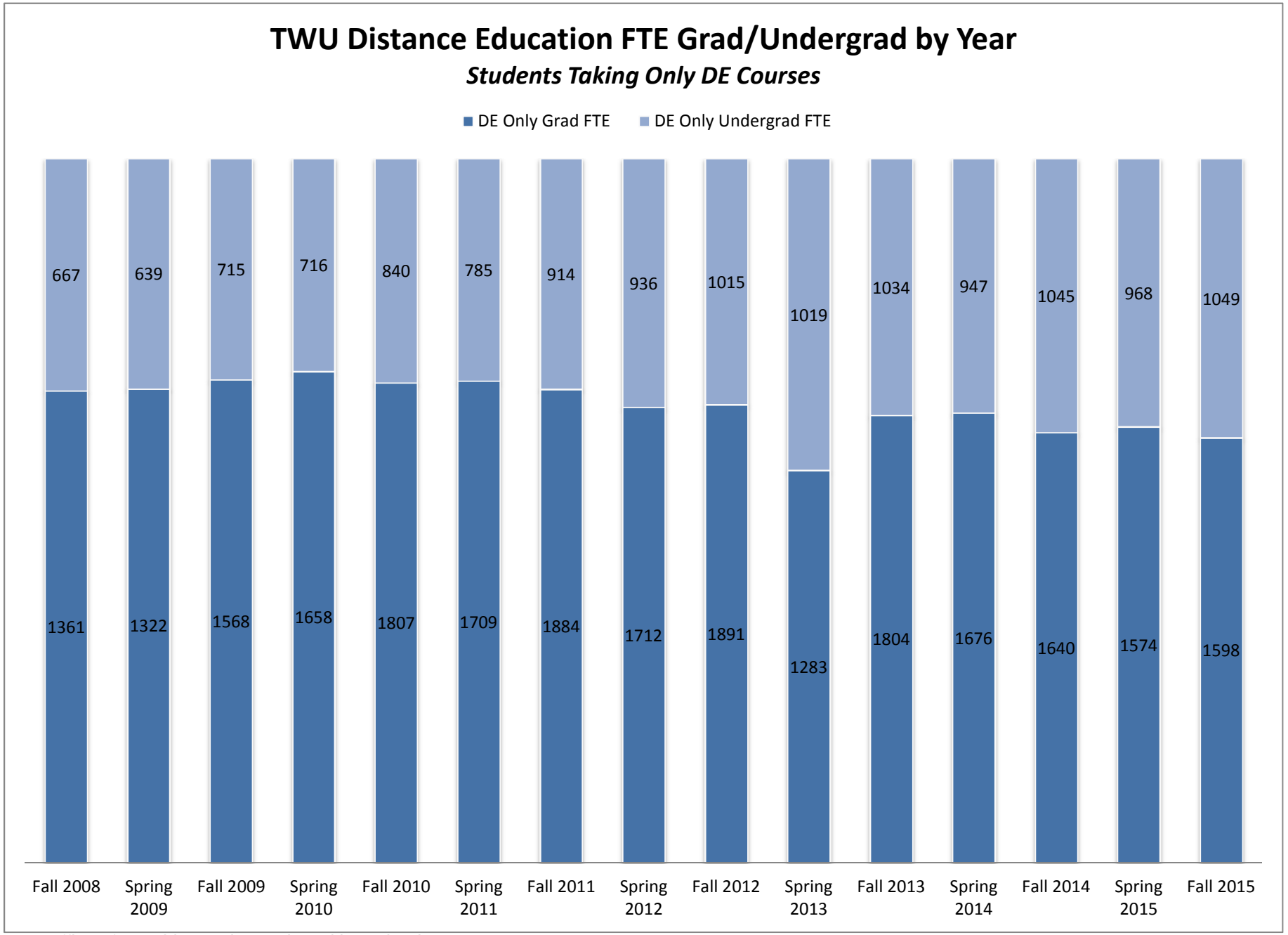


TWU Office of Teaching and Learning with Technology
Fall 2015

Student Enrollment by Academic Level
Distance Education/Face-to-Face Students

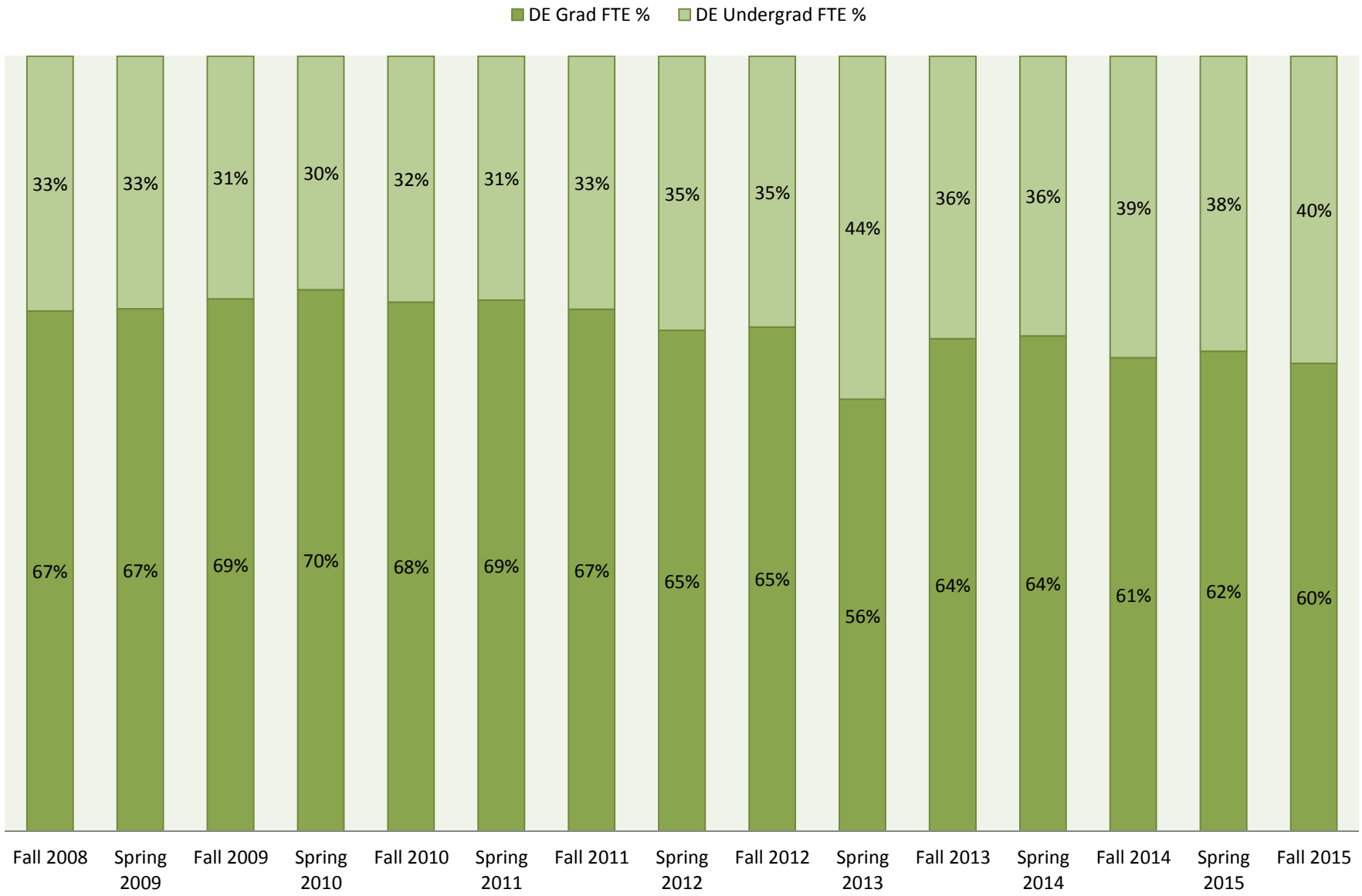



TWU FTE Composition
DE Only Grad FTE
DE/F2F & F2F Grad FTE
DE Only Undergrad FTE
DE/F2F & F2F Undergrad FTE
6694
667
2391
1361
6232
639
2227
1322
6883
715
2672
1568
6480
716
2588
1658
7390
840
2679
1807
7050
785
2636
1709
7860
914
2639
1884
7242
936
2191
1712
8130
1015
2591
1891
7493
1019
2971
1283
8216
1034
2644
1804
7624
947
2216
1676
8324
1045
2654
1640
7753
968
2458
1574
8585
1049
2556
1598
Fall 2008
Spring 2009
Fall 2009
Spring 2010
Fall 2010
Spring 2011
Fall 2011
Spring 2012
Fall 2012
Spring 2013
Fall 2013
Spring 2014
Fall 2014
Spring 2015
Fall 2015


TWU Distance Education FTE Grad/Undergrad by Year
Students Taking Only DE Courses
DE Only Grad FTE
DE Only Undergrad FTE
667
639
715
716
840
785
914
936
1015
1019
1034
947
1045
968
1049
1361
1322
1568
1658
1807
1709
1884
1712
1891
1283
1804
1676
1640
1574
1598
Fall 2008
Spring 2009
Fall 2009
Spring 2010
Fall 2010
Spring 2011
Fall 2011
Spring 2012
Fall 2012
Spring 2013
Fall 2013
Spring 2014
Fall 2014
Spring 2015
Fall 2015

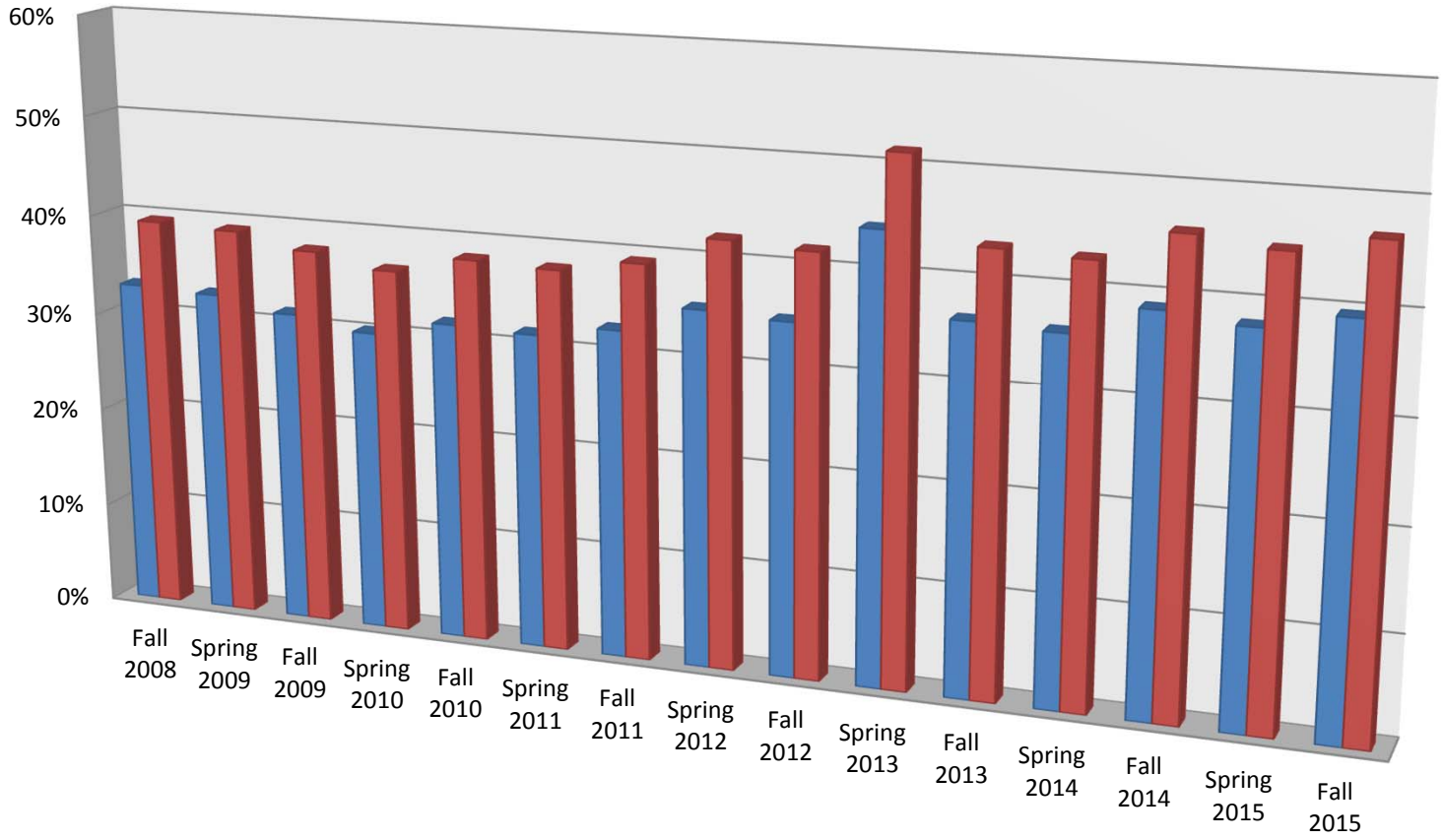
TWU Distance Education % FTE Grad/Undergrad Ratio by Year

Students Taking Only DE Courses



Percentage of Distance Education FTE & SCH Generated by Undergraduate Students by Semester

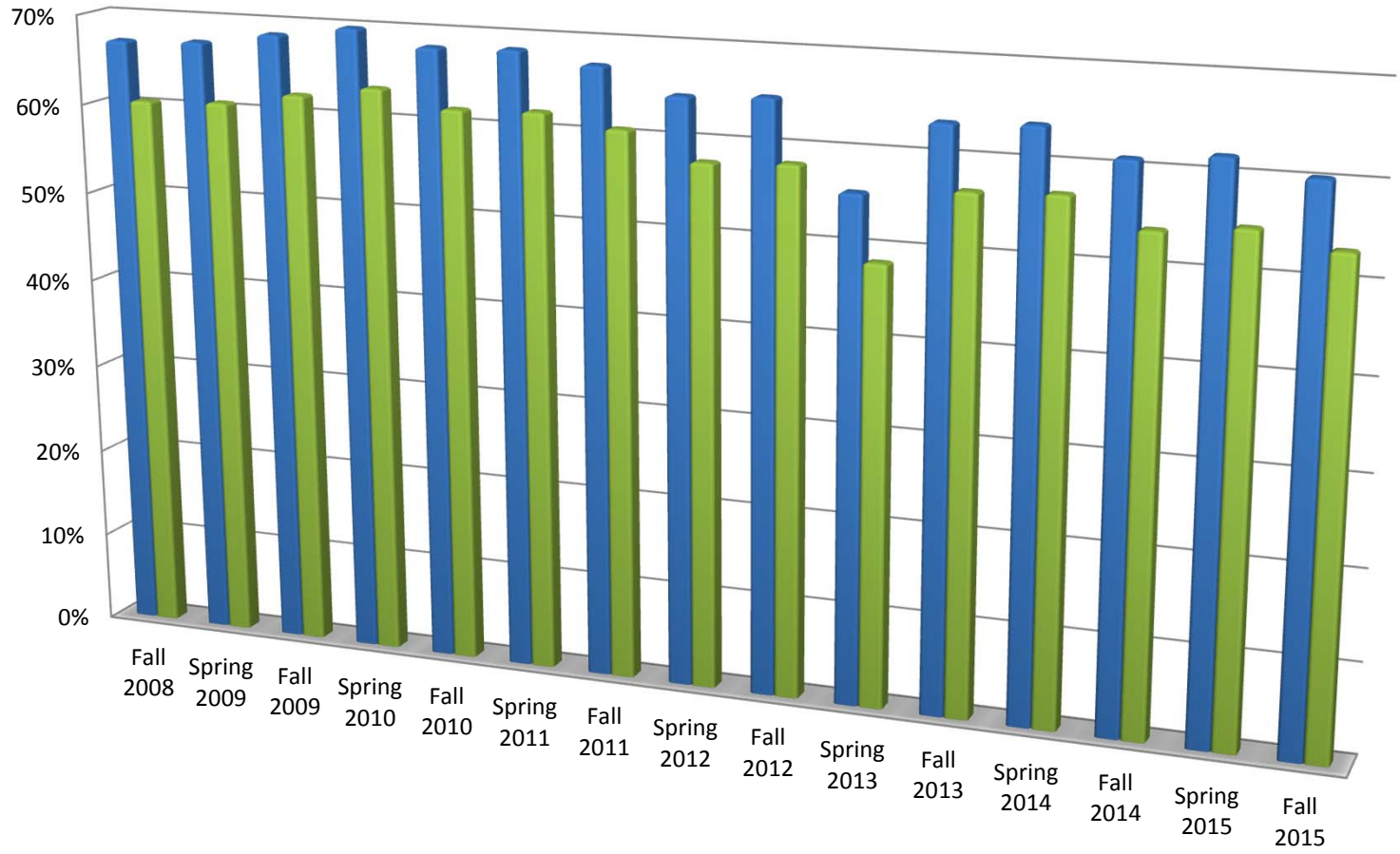
Students Taking Only DE Courses



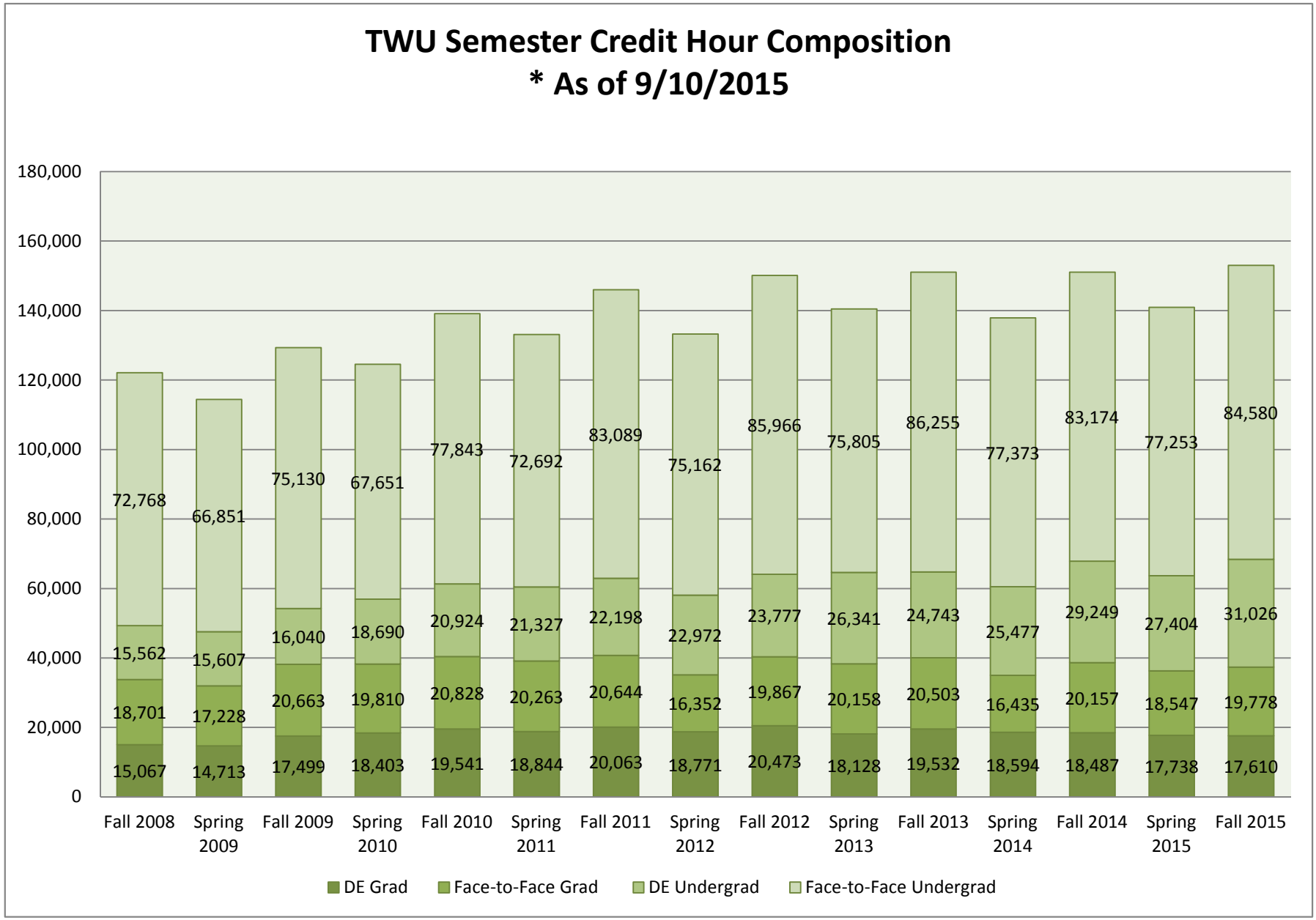
	Fall 2008	Spring 2009	Fall 2009	Spring 2010	Fall 2010	Spring 2011	Fall 2011	Spring 2012	Fall 2012	Spring 2013	Fall 2013	Spring 2014	Fall 2014	Spring 2015	Fall 2015
DE Undergrad FTE %	33%	33%	31%	30%	32%	31%	33%	35%	35%	44%	36%	36%	39%	38%	40%
DE Undergrad SCH %	40%	39%	38%	37%	38%	38%	39%	42%	42%	51%	43%	43%	46%	45%	47%

Percentage of Distance Education FTE & SCH Generated by Graduate Students by Semester

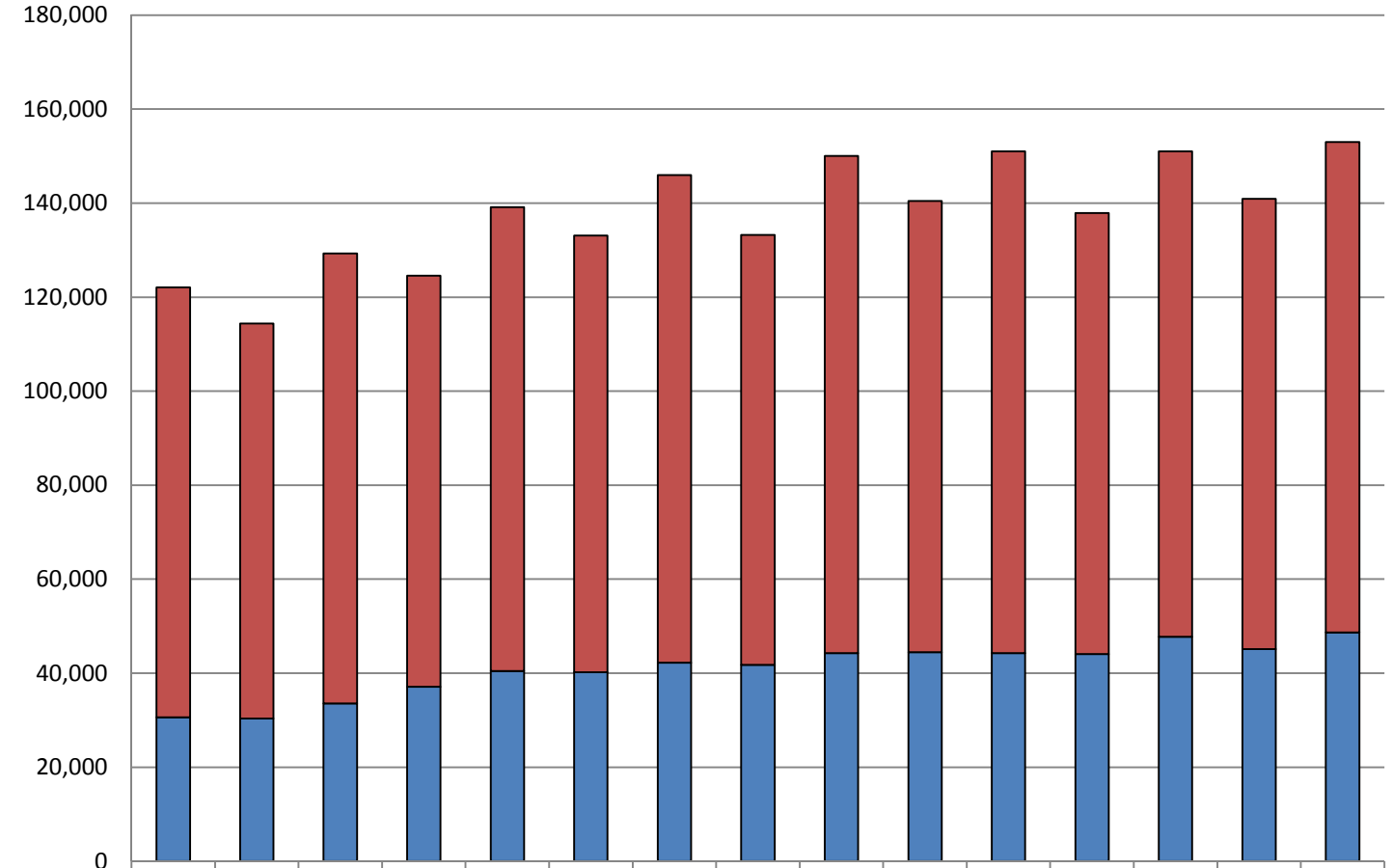
Students Taking Only DE Courses



	Fall 2008	Spring 2009	Fall 2009	Spring 2010	Fall 2010	Spring 2011	Fall 2011	Spring 2012	Fall 2012	Spring 2013	Fall 2013	Spring 2014	Fall 2014	Spring 2015	Fall 2015
DE Grad FTE %	67%	67%	69%	70%	68%	69%	67%	65%	65%	56%	64%	64%	61%	62%	60%
DE Grad SCH %	60%	61%	62%	63%	62%	62%	61%	58%	58%	49%	57%	57%	54%	55%	53%


TWU Semester Credit Hour Composition
* As of 9/10/2015
180,000
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
Fall 2008
Spring 2009
Fall 2009
Spring 2010
Fall 2010
Spring 2011
Fall 2011
Spring 2012
Fall 2012
Spring 2013
Fall 2013
Spring 2014
Fall 2014
Spring 2015
Fall 2015
15,067
18,701
15,562
72,768
14,713
17,228
15,607
66,851
17,499
20,663
16,040
75,130
18,403
19,810
18,690
67,651
19,541
20,828
20,924
77,843
18,844
20,263
21,327
72,692
20,063
20,644
22,198
83,089
18,771
16,352
22,972
75,162
20,473
19,867
23,777
85,966
18,128
20,158
26,341
75,805
19,532
20,503
24,743
86,255
18,594
16,435
25,477
77,373
18,487
20,157
29,249
83,174
17,738
18,547
27,404
77,253
17,610
19,778
31,026
84,580
DE Grad
Face-to-Face Grad
DE Undergrad
Face-to-Face Undergrad

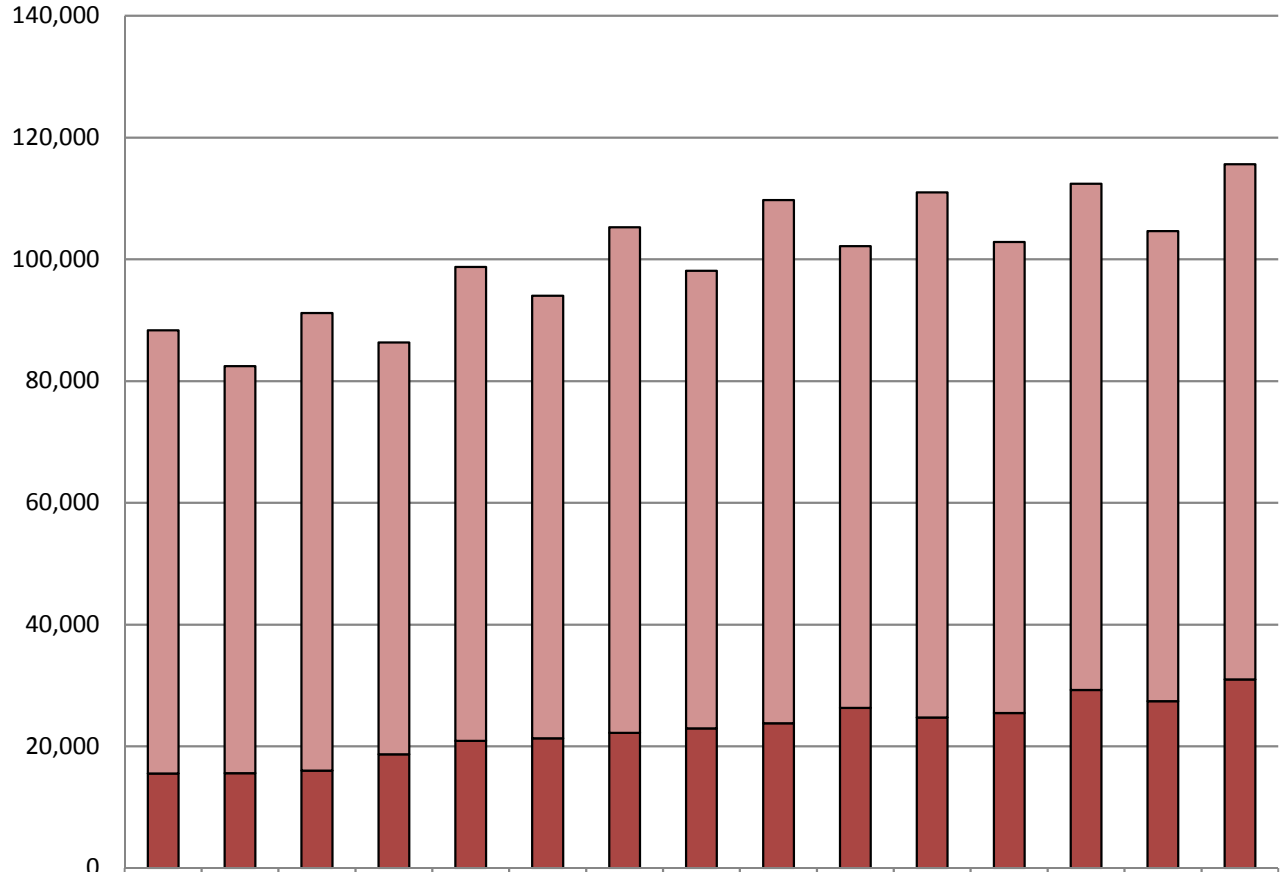
Semester Credit Hour Production



	Fall 2008	Spring 2009	Fall 2009	Spring 2010	Fall 2010	Spring 2011	Fall 2011	Spring 2012	Fall 2012	Spring 2013	Fall 2013	Spring 2014	Fall 2014	Spring 2015	Fall 2015
Face-to-Face SCH	91,469	84,079	95,793	87,461	98,671	92,955	103,73	91,514	105,83	95,963	106,75	93,808	103,33	95,800	104,35
DE SCH	30,629	30,320	33,539	37,093	40,465	40,171	42,261	41,743	44,250	44,469	44,275	44,071	47,736	45,142	48,636

*Preliminary data as of 9/10/2015

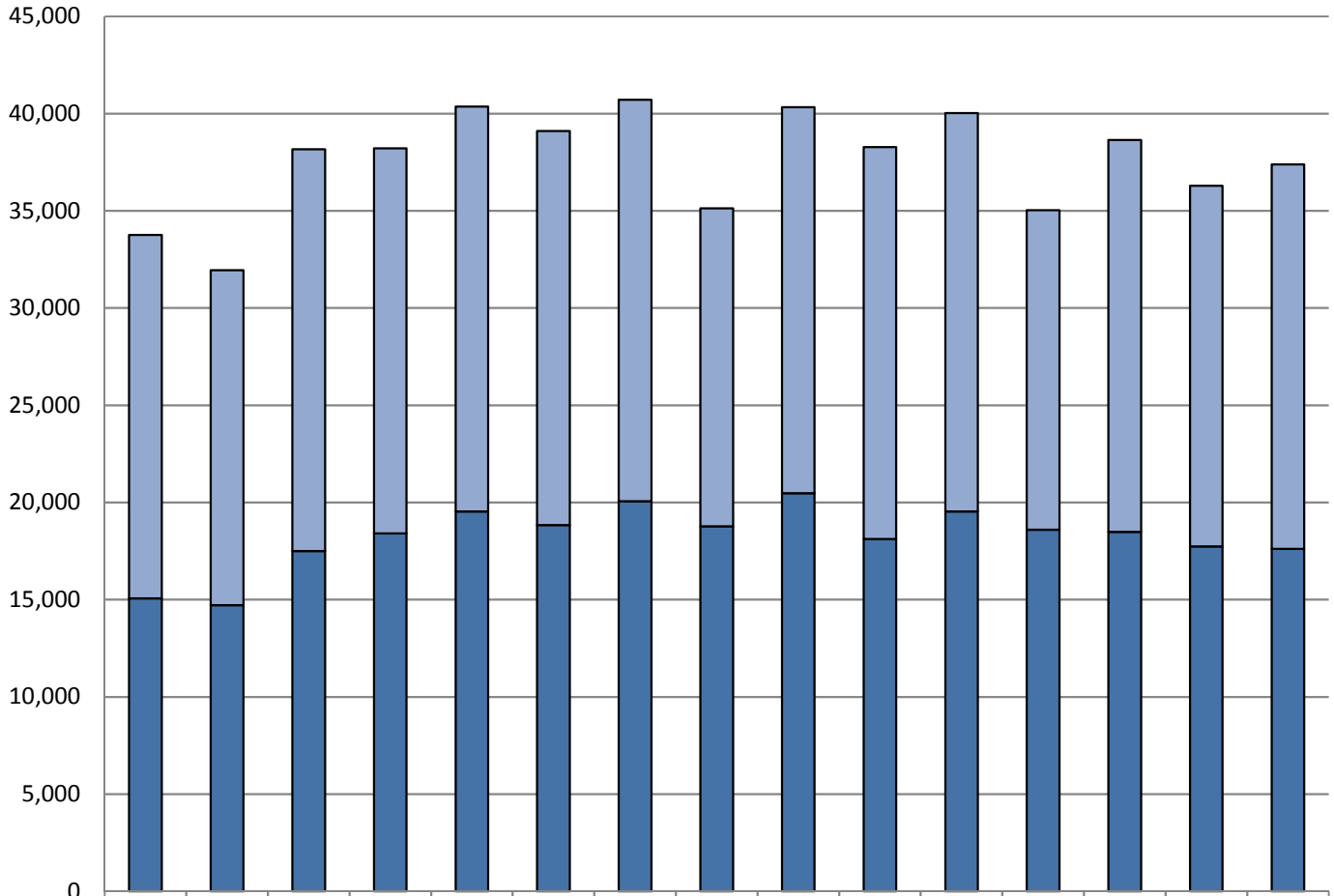
Undergraduate Semester Credit Hour Production



	Fall 2008	Spring 2009	Fall 2009	Spring 2010	Fall 2010	Spring 2011	Fall 2011	Spring 2012	Fall 2012	Spring 2013	Fall 2013	Spring 2014	Fall 2014	Spring 2015	Fall 2015
Face-to-Face Undergrad	72,768	66,851	75,130	67,651	77,843	72,692	83,089	75,162	85,966	75,805	86,255	77,373	83,174	77,253	84,580
DE Undergrad	15,562	15,607	16,040	18,690	20,924	21,327	22,198	22,972	23,777	26,341	24,743	25,477	29,249	27,404	31,026

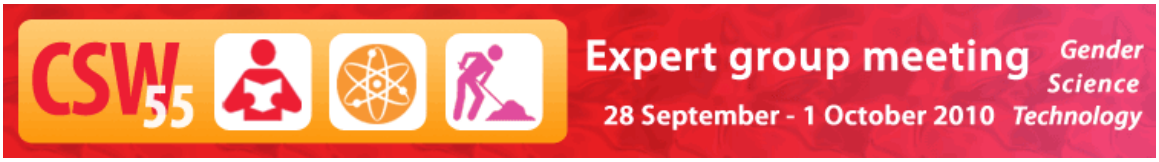
*Preliminary data as of 9/10/2015

Graduate Semester Credit Hour Production



	Fall 2008	Spring 2009	Fall 2009	Spring 2010	Fall 2010	Spring 2011	Fall 2011	Spring 2012	Fall 2012	Spring 2013	Fall 2013	Spring 2014	Fall 2014	Spring 2015	Fall 2015
Face-to-Face Grad	18,701	17,228	20,663	19,810	20,828	20,263	20,644	16,352	19,867	20,158	20,503	16,435	20,157	18,547	19,778
DE Grad	15,067	14,713	17,499	18,403	19,541	18,844	20,063	18,771	20,473	18,128	19,532	18,594	18,487	17,738	17,610

*Preliminary data as of 9/10/2015



Gender, science and technology

Report of the expert group meeting*

Organized by

United Nations Division for the Advancement of Women (DAW), part of UN Women
in cooperation with
United Nations Educational, Scientific and Cultural Organization (UNESCO)

Paris, France
28 September – 1 October 2010

* The views expressed in this document are those of the experts and do not necessarily represent the views of the United Nations

TABLE OF CONTENTS

I. Introduction

1. In accordance with its multi-year programme of work for 2010-2014, the Commission on the Status of Women (CSW) will consider 'Access and participation of women and girls in education, training, science and technology, including for the promotion of women's equal access to full employment and decent work' as its priority theme during its fifty-fifth session, from 22 February to 4 March 2011. In order to contribute to a deeper understanding of the issue and to assist the Commission in its deliberations, the United Nations Division for the Advancement of Women (DAW), part of UN Women, in collaboration with the United Nations Educational, Scientific and Cultural Organization (UNESCO) convened an expert group meeting (EGM) on 'Gender, science and technology' from 28 September to 1 October 2010 in Paris, France.

2. This report is the outcome of the meeting. It will provide inputs for the reports of the Secretary-General to the CSW. The report will be widely disseminated at the fifty-fifth session of CSW, including through a presentation during a panel discussion.

II. Organization of work

A. Participation

3. The EGM was attended by 12 experts from different regions of the world, 16 observers and one consultant. Five staff members of UNESCO and three staff members of DAW also attended the meeting (see Annex I).

B. Documentation

4. The documentation for the meeting consisted of:

   - A background paper prepared by a consultant
   - A background paper prepared by UNESCO
   - Twelve papers prepared by experts
   - Four papers prepared by observers

5. This report and all documentation relating to the meeting (see Annex II) are available online at:
   http://www.un.org/womenwatch/daw/egm/gst_2010/index.html

C. Programme of work

6. At its opening session on 28 September 2010, the meeting adopted the following programme of work (see Annex III):

   - Opening of the meeting

- Election of officers and adoption of the programme of work
- Presentation and discussion of the background papers
- Presentation of papers prepared by experts
- Working groups on issues and recommendations
- Adoption of the findings and recommendations
- Closing session

D. Election of officers

7. The experts elected the following officers:

- Co-chairs: Klaus Schroeder and Judith Zubieta
- Rapporteurs: Sophia Huyer and Verdiana Masanja

III. Global policy and legislative framework

8. Commitments on women's and girls' access to and participation in science and technology have been made by Governments at the international level. The Beijing Platform for Action, adopted at the Fourth World Conference on Women (1995), calls on Governments and all stakeholders to increase women's access to and retention in science and technology, including by adapting curricula and teaching materials and by increasing the share of women teachers in scientific and technological disciplines at all levels of education (paras. 82 (g) and 83 (f)). In addition, stakeholders should provide information on the availability and benefits of training programmes in these fields and funds for special programmes in science and technology to advance opportunities for women (paras. 82 (c), (e) and 85 (b)).

9. The Platform also urges stakeholders to promote gender-sensitive and women-centred health research, treatment and technology, and to link traditional and indigenous knowledge with modern medicine (para. 109 (b)), as well as to create training, research and resource centres that disseminate environmentally sound technologies to women (para. 258 (b)(v)). It emphasizes the need to undertake legislative and administrative reforms to give women equal rights with men to economic resources such as new technology (para. 165 (e)). In addition, it calls for outreach programmes to inform low-income and poor women, particularly in rural and remote areas, of opportunities for market and technology access, and to provide assistance in taking advantage of such opportunities (para. 173 (c)).

10. The outcome document of the twenty-third special session of the General Assembly (2000) highlights the need to encourage and support the education of girls in science, mathematics, new technologies, including information technologies, and technical subjects, and to encourage women, including through career counselling, to seek employment in high-growth and high-wage sectors and jobs (para. 82 (i)). It also stresses the importance of providing access to and

control over technology, particularly for women living in poverty and for women entrepreneurs (paras. 74 (a) and 82 (g)).

11. The Science Agenda – Framework for Action of the UNESCO World Conference on Science (WCS) (1999) calls for special efforts by governments, educational institutions, scientific communities, non-governmental organizations and civil society, with support from bilateral and international agencies, to ensure the full participation of women and girls in all aspects of science and technology.

12. The World Summit on the Information Society (WSIS) recognizes, in the Geneva Plan of Action (2003) and the Tunis Agenda for the Information Society (2005), the importance of promoting women's participation in information and communications technologies (ICT), including at decision-making level. It calls for equal training opportunities in ICT-related fields for women and early intervention programmes in science and technology, targeted at young girls, in order to increase the number of women in ICT careers. It also highlights the need for gender-responsive ICT policies. In addition, at the United Nations World Summit (2005), Governments committed to ensuring women's equal access to productive assets and resources, including technology.

13. The Commission on the Status of Women has addressed the topic in a number of its sessions since 1996. The agreed conclusions on women and the environment (1997) urge stakeholders to support the role of women in developing environmentally sound technologies and in influencing the development of new and appropriate technologies, while the agreed conclusions on education and training (1997) call for renewed importance to be given to education in mathematics, science and technology for girls and women, including the use of information technology. They also stress the importance of information services and professional guidance to promote equal participation in these fields, and to encourage women's participation in development of new technologies, from design to application, monitoring and evaluation.

14. The agreed conclusions on participation in and access of women to the media and information and communication technologies and their impact on and use as an instrument for the advancement and empowerment of women (2003) call for equal opportunities for women and for monitoring gender representation in different categories and levels of work, education and training in ICT. In addition, the agreed conclusions on enhanced participation of women in development: an enabling environment (2006) highlight the need to increase women's and girls' equal and effective access to and use of information and communication technologies, as well as applied technology. The agreed conclusions on financing for gender equality and the empowerment of women (2008) recognize the importance of assisting women-owned businesses in participating in and benefiting from technological innovation and transfer.

15. The Commission on Science and Technology for Development (CSTD) is the sole functional commission of the United Nations Economic and Social Council (ECOSCO) to have a Gender Advisory Board (GAB), established in 1995. The GAB, previously the Gender Working Group, developed a set of 'Seven Transformative Action Areas' to progress toward gender equality, which were endorsed by ECOSOC in 1995. In 2006, the GAB added an eighth transformative action area. The CSTD has addressed gender equality issues in its resolutions.

16. The Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), in its article 14, requires States parties to ensure the right of women living in rural areas to have access to appropriate technology.

IV. Findings and recommendations

17. The potential of science and technology (S&T) to advance development and contribute to people's well-being has been well-recognized. Science and technology is vital for the achievement of internationally agreed development goals, for instance by facilitating efforts to eradicate poverty, achieve food security, fight diseases, improve education, and respond to the challenges of climate change. It has also emerged as an important means for countries to improve productivity and competitiveness and to create decent work opportunities.

18. The contribution of science and technology to development goals can be accelerated by taking into account its gender dimensions. For instance, greater access to and use of existing technologies, as well as better products that respond to women's needs, can increase women's efficiency in carrying out productive and other tasks. Acquiring science and technology education and training can empower women in all aspects of their lives. Eliminating barriers to women's employment in science and technology fields will further the goals of full employment and decent work.

19. The EGM covered a wide range of issues related to the intersection of sex and gender, and science and technology. Discussions focused on three main aspects: the participation of women and girls in science and technology education and employment; their access to and use of technology; and the need to integrate a gender dimension into research content and product design.

20. After clarifying key terms, this section presents the findings of the meeting and the recommendations adopted by the experts. More information on participants' individual contributions is available on the EGM web page, where expert and observer papers and presentations have been posted.

21. While recommendations are addressed to all stakeholders, they may be of particular relevance to the following actors: governments at all levels, including ministries of education, science and technology, labour, environment; national

gender equality and science machineries; donors; multilateral agencies; funding agencies; educational institutions including public and private schools; research institutions; the private sector, including enterprises developing and marketing technology products; employer organizations; trade unions; professional bodies; and non-governmental organizations (NGOs).

Terminology

Science and technology

22. The term 'science and technology' can be understood in a broad sense, including fields as different as physics, political science and literature, or in a narrow sense that covers primarily academic and professional disciplines related to natural sciences, engineering, mathematics and computing. This report uses the latter definition.

23. It is also important to recognize that the definition of science can include indigenous science and traditional knowledge systems. The concept of technology is, likewise, socially and culturally diverse, referring to hand-made tools as well as complex products and processes, for instance information technology (IT) systems. This report uses these definitions.

Gender, sex, and gender analysis

24. UNESCO provides the following definitions.[1]

"*Gender* refers to the roles and responsibilities of men and women that are created in our families, our societies and our cultures. The concept of gender also includes the expectations held about the characteristics, aptitudes and likely behaviours of both women and men (femininity and masculinity). Gender roles and expectations are learned. They can change over time and they vary within and between cultures. Systems of social differentiation such as political status, class, ethnicity, physical and mental disability, age and more, modify gender roles. The concept of gender is vital because, applied to social analysis, it reveals how women's subordination (or men's domination) is socially constructed. As such, the subordination can be changed or ended. It is not biologically predetermined nor is it fixed forever."

"*Sex* describes the biological differences between men and women, which are universal and determined at birth."

"*Gender analysis* is the collection and analysis of sex-disaggregated information. Men and women both perform different roles. This leads to women and men having different experience, knowledge, talents and needs. Gender analysis explores these differences so policies, programmes and projects can identify and

[1] United Nations Educational, Scientific and Cultural Organization (2003). UNESCO's Gender Mainstreaming Implementation Framework for 2002-2007.

meet the different needs of men and women. Gender analysis also facilitates the strategic use of distinct knowledge and skills possessed by women and men."

25. This report uses the above definitions. In consequence, references to gender analysis can cover both biological (sex) and socially-constructed (gender) factors. The same applies to the term gender bias.

A. Women's and girls' participation in S&T education and employment

26. Participating in S&T education is important to support women's and girls' role as users and innovators of technologies as well as researchers, scientists and technologists. Their low participation is problematic not only from a rights point of view, but also from an economic angle. In an era where economic growth is often linked to a country's capacity for innovation, women's contributions become especially important. Women help diversify research and development teams, bringing different points of view that can fuel creativity and result in better quality outputs. For example, in 2007, American IT patents produced by mixed-sex teams had higher citation rates than those produced by male-only or female-only teams.[2]

27. Women and girls have long been underrepresented in S&T education and employment, and much has been done to understand the causes and identify solutions. Initiatives have been put in place at the international, regional, national and sub-national levels, and stakeholders, including Governments, universities, the private sector and NGOs, have over time developed a wide range of policies, programmes and projects. However, efforts have generally focused more on S&T education than on employment. In some regions, little has been done to address the hurdles that women scientists and engineers face.

28. It is difficult to assess how much progress has been made globally, particularly with regard to women's employment in S&T. Substantial variations exist among countries and within specific subfields of science, as statistics presented in the background and expert papers illustrate. A lack of comparable, sex-disaggregated data on participation in education and employment by discipline and research and development sector hinders analysis at the global or, in many cases, regional level. For example, data is rarely disaggregated by subfields of study in engineering, and statistics on researchers often refer to all fields of science, including humanities and social sciences.

Recommendations

29. The Expert Group urges stakeholders to:

[2] National Center for Women & Information Technology (NCWIT) (2006). Who Invents IT? An Analysis of Women's Participation in Information Technology Patenting.

a) Encourage and accelerate the development of statistical indicators and collection of sex-disaggregated data to allow for clear tracking of trends and monitoring/evaluation of actions.
b) Carry out gender-sensitive monitoring and evaluation of all programmes.
c) Mainstream a gender perspective in S&T educational institutions and particularly in the workplace. Concrete actions can include:
    i) Monitoring the implementation and evaluating the impact of education-related gender policies adopted by countries and educational institutions;
    ii) Adoption of gender equality policies in employment;
    iii) Adoption of policies and practices on anti-harassment and violence against women and girls;
    iv) Development of gender action plans by institutions and their human resource units with specific goals and monitoring frameworks and accountability structures, linked to accreditation and funding;
    v) Development of guidelines for gender-sensitive S&T education and employment;
    vi) Establishment of mandatory gender-sensitization for all staff, particularly professors and managers.
d) Undertake a global study on the level of participation of women and girls in S&T education and employment, and identify good practices that have increased their participation.

S&T education

30. Access to education is a prerequisite for girls to train in science and technology-related subjects. On a global scale, however, many children remain out of school, and in several regions girls' enrolment at the primary and secondary levels continues to lag behind boys'. In many countries, there are hidden costs to education which have a disproportionate impact on women and girls. Families must factor in the opportunity cost of educating a child, in particular a girl – that is, the loss of income if the child can no longer work outside the home or take on domestic responsibilities. In addition, some Governments under-fund the education sector, which leads to private schools filling the gap and creates a two-tier system, where only wealthy students have access to quality education. Failing to educate all girls and boys, however, has economic consequences both for the individuals and for the country.

31. It is difficult to attract and retain women and girls in S&T education, and to ensure that they make the transition from higher education to professional life. Negative stereotypes impact on girls' interest in science and technology; they can also contribute to science anxiety. The media can play a key role in maintaining or challenging the social construct of S&T as a male sphere, depending on whether it depicts women and girls as scientifically and technologically competent and capable. Textbooks and other educational materials can also perpetuate or question this bias. While science textbooks often portray scientists as males, or depict women in stereotypical roles, some textbook authors have

systematically removed gender bias from science reporting and images.[3] In addition, the family environment and the choice of toys available at home and at preschool can also reinforce or combat the gender-science stereotype.

32. Whether S&T subjects are taught at the primary school level, and the way in which they are taught, can play an important role in promoting interest in science in both girls and boys, and later reducing the leakage of girls from S&T education. Quality of learning rests heavily on the quality of teaching and on the positive and negative messages that are communicated within the classroom. While having a poor literature teacher would not prevent someone from ever opening a book again, a poor science teacher may alienate a person from science and technology.

33. However, primary school teachers often lack training on science subjects, and more generally, teachers at various levels of education tend to have little information on how to teach S&T subjects in gender-sensitive ways. For instance, emphasizing the potential of S&T innovations for improving people's everyday life may help engage girls. In addition, finding qualified science and mathematics teachers can be difficult, particularly in view of the alternative employment opportunities with higher pay, status and respect that exist outside schools.

34. Exposing girls to successful female role models in mathematics and science is another way to reduce negative stereotypes and improve girls' performance and interest in mathematics and science.[4] There is a need to raise the number of women S&T teachers, who play a significant role in enhancing girls' interest in scientific subjects. In the Republic of Korea, while 80 per cent of teachers are women, few of them teach mathematics or science subjects.

35. In some countries, distance education has increased women's access to tertiary education in science and technology, in particular for women who would have to leave their families and communities behind to pursue higher education away from home. Distance education also provides women with the flexibility to fit their study time into their daily schedule. In addition, some women feel more comfortable participating in virtual rather than in-person class discussions. Open source resources, which are freely available for use and redistribution, can also be useful in increasing women's access to education. Distance education can be combined with periods of field or laboratory research to meet the requirements of some S&T subjects.

36. The variety of barriers to women's and girls' participation in S&T education highlights the need for responses that not only focus on encouraging women and girls to enter S&T fields, but also on changing institutions to make S&T more

[3] See for example the following tertiary level textbook: Gilbert, S. (2009). *Developmental Biology (8th ed.).* Sunderland, Mass.: Sinauer.

[4] American Association of University Women (2010). *Why so Few? Women in Science, Technology, Engineering and Mathematics*. Washington DC: AAUW.

attractive to women and girls. The following table provides examples of different initiatives.

Table 1: Initiatives to increase women's and girls' participation in S&T education

Country/ region	Key actor	Initiative	Aim of initiative	Activities
Burkina Faso, Cameroon, Ghana, Kenya, Malawi, Mali, Mozambique, Rwanda, Senegal, Swaziland, United Republic of Tanzania, Uganda, Zambia, and Zimbabwe	Association for the Development of Education in Africa (ADEA) and Forum for African Women Educationalists (FAWE)	Female Education in Mathematics and Science and Africa (FEMSA), and Science, Mathematics and Technology model	To increase and sustain access, interest, participation and performance of girls in science, mathematics and technology subjects at all levels.	Science camps and clubs, study tours, profiles on women achievers in science-based fields, exposure to role models, and awards to female achievers in science, mathematics and technology subjects
European Union	European Commission	Science education now: A renewed pedagogy for the future of Europe	To examine a cross-section of on-going initiatives and draw from them elements of know-how and good practice that could bring about a change in young people's interest in science studies	Analysis of ongoing science education initiatives within the European Union
Republic of Korea	Government	Women into science and engineering (WISE)	To increase girls' participation in S&T education	Online and offline mentoring
Republic of Korea	Government	Women's Academy for Technology Changer in the 21st Century (WATCH21)	To increase girls' participation in S&T education	Providing high school girls with experience at engineering research laboratories

Recommendations

37. The Expert Group urges stakeholders to:

Access to quality S&T education

a) Promote women's and girls' access to free quality formal education, technical and vocational education and training and non-formal education throughout the life cycle as the essential foundation for women's careers in science and technology and use of technology.
b) Ensure the provision of quality education for girls and women throughout the life cycle.
c) Ensure adequate funding, in particular to pay for qualified S&T teaching, training, materials, equipment, and infrastructure, so that both public and private systems can provide equal opportunities to girls and boys, independently of socio-economic condition.
d) Review teacher education policies and programmes to provide quality gender-sensitive pre-service and in-service training in science and mathematics for teachers.
e) Develop effective, high-quality S&T education and technical and vocational education and training programmes in order to foster personal and societal interest in these disciplines and to ensure that curricula are relevant to the socio-cultural context and physical environment, using appropriate approaches and materials, such as manipulative toys for girls at preschool, and practical applications.
f) Integrate science and technology into non-formal education, supported by appropriate policy frameworks, capacity development programmes and trained teaching personnel, including through:
    i) Reaching out to girls and women in rural or depressed urban areas in particular, and to those who missed full educational opportunities and are in the labour market;
    ii) Using non-traditional delivery mechanisms, such as distance learning technologies, open source courseware, mobile phones, webcasts, podcasts, partnerships with museums and private-public partnerships.
g) Promote the use of ICTs by women as a means to provide access to education and vocational training, and to increase employment opportunities for women in the IT sector.
h) Take into account and eliminate implicit and explicit socio-cultural barriers to girls' and women's participation in science or technology education (e.g. family dynamics; division of roles and responsibilities within the family; expectations, parenting messages), including how gender may combine with other factors of inequality to leave girls multiply disadvantaged.

Addressing the gender-science stereotype[5]

i) Address the negative gender stereotypes concerning the perceived suitability of women in science and technology careers at all levels, including through:
    i) Harnessing the transformative power of the media at local, national and international levels to eliminate negative stereotypes and highlight the social and economic benefits to society of women's participation in S&T;

[5] These recommendations are also relevant to further women's participation in S&T employment.

ii) Sensitizing science journalists, science communicators, including scientists themselves, on non-'technical' issues, such as democracy, development and gender equality;
iii) Developing gender-sensitive educational material and training teachers as part of their professional development to ensure that negative representation of women perpetuating inequality are not retransmitted in the classroom.

j) Promote positive female role models and images in the classroom, workplace, community and home, in collaboration with volunteers, professional bodies, women's groups within S&T networks (both in universities and outside academia), to address the underrepresentation of women scientists, technologists and educators.
k) Take specific measure to reach gender balance among teaching personnel in science and mathematics.

Raising awareness of S&T careers for girls[6]

l) Complement the formal curricula with innovative activities such as science camps, girl days, specially designated days focused on S&T, company competitions/fellowships for girls and boys.

A 'Girls and ICT Day', similar to the IT Girls initiative of the European Union, could be established internationally to introduce young girls to opportunities in technical fields in both the public and private sector. Governments, the private sector and the UN system would work together to organize events such open door activities, lectures, and shadowing of both male and female workers.

m) Develop support structures, in particular mentoring programmes, gender-sensitive counselling, career guidance, and post-course job placement services, to encourage women and girls to go into careers in S&T with the support of their families and local communities; develop appropriate materials and provide gender-sensitive career information on possible careers in S&T.

S&T employment

38. Women who graduate in S&T subjects do not necessarily transition to a career in this field, or may drop out of it later in their professional life. In addition, few of them reach senior management positions. Attraction, recruitment, promotion, retention and recognition are key points where effective strategies are needed to increase women's participation in S&T in academia and in the public and private sectors.

39. The unequal sharing of family responsibilities is an important reason for the underrepresentation of women in S&T employment, including in decision-making positions. In the academic field, for instance, caregiving activities make it more difficult for women to establish the necessary record of research, teaching, and administrative service to obtain tenure, that is, senior, permanent academic

[6] These recommendations are also relevant to further women's participation in S&T employment.

positions. Stopping the tenure track clock, that is, extending the probationary period for those who care for newborn or newly adopted children, is an example of a measure that helps parents reconcile their work and family responsibilities. Other examples of family-friendly policies include parental leave, daycare supplement, and emergency care for children and elders.

40. In some cases, the socio-cultural environment may discourage women's progression in S&T careers. For instance, in some countries, women who take up jobs in S&T teaching and research are unable to do the travel that would be necessary for their research, and end up teaching only. This in turn constrains their publishing record and lowers their chances for career advancement.

41. Gender pay gaps persist in S&T, including in countries where women are as well- or better-qualified than their male colleagues. In addition, more research is needed to understand how the geographic mobility and the types of contracts and benefits that are prevalent in S&T research work affect women and men differently.

42. Women are also less likely to apply for grants, and tend to apply for lower amounts than men do. Depending on the country, factors contributing to this situation include family obligations, curriculum vitae (CVs) lacking publications, and lack of confidence.

43. Many initiatives have been undertaken throughout the world to increase women's participation in S&T employment. The following table provides examples of such initiatives.

Table 2: Initiatives to increase women's participation in S&T employment

Country/ region	Key actor	Initiative	Aim of initiative	Specific actions
Africa	Consultative Group on International Agricultural Research (CGIAR)	African Women in Agricultural Research and Development (AWARD)	To fast-track the careers of African women scientists and professionals delivering pro-poor agricultural research and development that benefit rural communities, especially women	Pairing of women fellows with senior professional mentors – both men and women – for one to two years. Offering mentors access to special events such as leadership or research proposal writing courses
European	European	genSET	To improve the	Providing a forum for

Union	Commission		excellence of European science through inclusion of the gender dimension in research and science knowledge making	dialogue between European science leaders, science stakeholder institutions, gender experts, and science strategy decision-makers, to help implement effective overall gender strategies
Republic of Korea	Government	Recruitment target system for women scientists and engineers	To increase the average rate of women recruits, and consequently women employees	Recruitment target system applied to 98 government-funded, -invested, and national institutes, and included in evaluation factors of the heads of the institutes. Monitored by the Institute for Supporting Women in Science and Technology and reported to the National S&T Council every year
Republic of Korea	Government	Establishment of the Institute for Supporting Women in Science and Technology (ISWIST)	To foster women professionals in S&T from the start of their employment to their becoming leaders in the S&T workplace	Research in policy development; education, training and consultation with women in S&T; provision of information on employment; and support to organizations of women scientists and engineers
Republic of Korea	Government	Research funds for women scientists and engineers	To retain women scientists and researchers and to foster their career	Point award system that gives extra points to women researchers or those returning from maternity leave. Quota system in which 14 per cent of project managers must be women. Some research funds reserved for women scientists and engineers
Republic of Korea	Government	Daedeok Research	To assist women and	Establishment of a childcare centre at a research

		Complex childcare centre	men in work/life balance	complex, open from 7.30 a.m. to 10.30 p.m.
Republic of Korea	Government	Promotion target system for women scientists and engineers	To ensure that 30 per cent of those promoted are women	Promotion target system recommended to 25 government-funded S&T institutes. Monitored by the Institute for Supporting Women in Science and Technology and reported to the National S&T Council every year
Republic of Korea	AMORE-PACIFIC and Korean Federation of Women s Science & Technology Associations	AMORE-PACIFIC Awards and Fellowships	To honour women scientists and young female researchers	Provision of awards and fellowships to increase the visibility of women scientists through publicizing their achievements
United Kingdom	United Kingdom Resource Centre for Women in Science, Engineering and Technology (UKRC)	Athena Charter for Women in Science	To recognize good employment practices for women working in science, engineering and technology in higher education and research	Awards for good practices on recruiting, retaining and promoting women in science, engineering and technology in higher education institutions
United States of America	University of Michigan and National Science Foundation	Strategies and Tactics for Recruiting to Improve Diversity and Excellence (STRIDE), part of the national Increasing the Participation and Advancement of Women in Academic	To maximize the likelihood that diverse, well-qualified candidates for faculty positions (for instance women and minorities) will be identified, and if selected, will be recruited,	Sensitization workshops for faculty and administrators involved in hiring, and meetings with chairs, faculty search committees, and other department members involved with recruitment and retention

		Science and Engineering Careers (ADVANCE) programme	retained, and promoted	
Global	L'OREAL and UNESCO	L'OREAL-UNESCO Awards and Fellowships	To honour women scientists and young female researchers	Increasing the visibility of women scientists through publicizing their achievements

Recommendations

44. The Expert Group urges stakeholders to:

a) Provide financial support for women in tertiary and post-graduate S&T programmes.
b) Provide more professional support and leadership programmes for women scientists.
c) Consider establishing quotas on women's representation in senior positions in S&T institutions and decision-making bodies.
d) Provide training on grants applications to early career researchers, particularly women.
e) Promote collaboration among a variety of stakeholders, including at the local level, to:
    i) Implement measures to attract, recruit, advance, retain and reintegrate more women in S&T careers;
    ii) Ensure that enabling environments (salaries, collective agreements, laws, regulations, etc) are work- and family-friendly for both women and men; encourage employers and workers to include such measures in collective agreements, and provide incentives to employers to implement such measures.
f) Provide special funding for returners, dual careers, nurseries and kindergartens, and mentoring.
g) Establish complaint and redress procedures for discrimination on the basis of sex in S&T employment, and provide resources for legal aid.
h) Apply gender-responsive budgeting principles, especially in grants and award criteria.
i) Apply the principle of equal pay, entitlements and benefits for work of equal value, and ensure equal social protection, while taking into account the gender dimensions of mobility (e.g. contracts, pension, work permits, brain drain, dual career opportunities) and career progression.

B. Women's access to, development of, control over, and ability to benefit from technology

45. Women spend a large amount of time performing labour-intensive tasks. Technology can support them in their multiple roles in production, community management, domestic and care responsibilities, such as the provision of care to children, the sick and the elderly. Technology is influenced by cultural, economic and social factors, therefore it is not gender-neutral.

46. Women are technology developers, producers and users. In many parts of the developing world, women play a key role in food production and household nutrition, working up to 13 hours per day in agriculture-related and food preparation activities, including planting, weeding, harvesting, processing, and cooking. They are often the holders of traditional knowledge, for instance on seeds, production techniques, climate, soil conditions, and seasonal plant cycle calendars. Women, however, do not only rely on using ancient methods and materials: they also experiment and develop new techniques, for example to improve seeds, better manage pests, and conserve food. Their role, however, is often not formally recognized.

47. Access to technology is key to improving women's and girls' lives. Technologies, while designed for a primary goal, often have benefits that extend to many other aspects of a person's life. For example, easier access to safe water both improves health and sanitation, and reduces women's and girls' work burden, therefore freeing up time for other activities. Solar energy can transform a community by, among others, preventing eye strain, providing light for children to study by, and allowing longer storage of food.

48. Yet, too few women enjoy the benefits of technology. For instance, women's access to ICT – a key source of information and knowledge – is lower than men's in the majority of countries. In those countries approaching or close to gender parity in ICT access, this parity occurs only in urban centres.[7]

49. Technology development institutions and industrial enterprises have often overlooked women's concerns. The design and development of technology is often male-biased, focusing on technological excellence (faster, larger, and more powerful) rather than focusing on benefits that would improve people's everyday life. Technology often is incompatible with women's physiology, with the tasks they perform, and with their need for local, human-scale solutions. In addition, women's local and indigenous knowledge tends to be marginalized or ignored. Technology design and development is also too rarely grounded in specific knowledge of the local environment and socio-cultural setting. And yet, how technologies are developed or designed can prevent or promote entrepreneurship and income generation opportunities.

50. The failure to recognize women's technology needs and to support women's role in development hinders poverty reduction and national sustainable development.

[7] Huyer, S. et al. (2005). *From the Digital Divide to Digital Opportunities: Women in the Information Society.*

There is an urgent need for Governments to implement new models and approaches to scaling up technologies for infrastructure and livelihoods, for instance in the field of transportation, water and sanitation, and ICT.

51. To better respond to the needs of women, it is important to integrate users' concerns in the technology development process, by making research and development more participatory and user-driven. For example, in much of Africa, women have the main responsibility for fetching and carrying water. Tapping into women's knowledge of soils and their water yield can help civil engineering teams find the best well placement.

52. Taking into account women's needs is also key for designing appropriate responses to global challenges such as climate change. Focusing on gender and technology dimensions will provide opportunities to address some of the challenges in adapting to climate change, that is, the need to reduce vulnerability to known hazards, to improve resilience of livelihood strategies, and to build adaptive capacities to cope with uncertainty.

> A study in Andra Pradesh, India, found that the majority of farmers were not receiving vital information on weather alerts or cropping patterns. However, this lack of access to information was much more acute among women: only 21 per cent of women reported having access to this information, versus 47 per cent of men.[8]

53. Globalization and trade are other issues that impact on women's access to technology and technology-related work. They can provide opportunities for women, for instance by creating work in the service sector, call centres, electronics manufacturing, and by opening new markets for women. However, they can also exacerbate existing inequalities by disrupting women's work and profit margins in certain sectors, such as agriculture. Women producers may be unable to compete with foreign goods, which can result in longer working hours, lower pay, or push women out of a sector entirely.[9]

Recommendations

54. The Expert Group urges stakeholders to:

    a) Adopt a participatory, user-driven approach, rather than a technology-driven approach, in research, knowledge production and technology development that takes gender into account and is tailored to the local context.

[8] Food and Agriculture Organization of the United Nations (N.d). Does Gender Make a Difference in Dealing with Climate Shifts? Research Results from Andhra Pradesh, India.

[9] United Nations Conference on Trade and Development (2002). Mainstreaming Gender to Promote Opportunities through the Increased Contribution of Women to Competitiveness. Note by the UNCTAD Secretariat. Commission on Enterprise, Business Facilitation and Development Sixth session Geneva, 18–22 February.

b) Systematically include gender analysis, and consult with women on design, use and deployment of technologies that support women's needs in all tasks they undertake.
c) Undertake gendered situational analysis/assessment and gender analysis of programming and implementation for all science, technology and innovation (STI)-related actions, policies and programmes.
d) Review and assess existing technologies, practices and models for lessons learned and replication or scaling up to the national level.
e) Include monitoring and evaluation of implementation in all programmes, including collection of sex-disaggregated data.
f) Collect and assess existing practices to identify lessons learnt and models for replication and scaling up.
g) Ensure women's and men's participation in all decision-making bodies as well as in the design, planning and implementation of STI programmes and policy.
h) Harness women's knowledge networks and information channels to disseminate technologies.

Supporting women's productive and other activities

55. In many parts of the world there is a distinction made between men's crops and women's crops. Men tend to cultivate cash crops, while women grow crops used for subsistence and family needs. This division of labour, combined with women's involvement in food preparation and distribution, makes women key actors in the achievement of food security. However, agricultural productivity tends to be lower on women-owned plots. Women have limited access to a wide range of agricultural assets, including land, agricultural inputs, technological resources (fertilizer, improved seed, clean water, insecticides, mechanical power), and when they do have access, they often lack decision-making power or capacity to mobilize these agricultural assets.

56. Agricultural technologies have tended to be focused on practices undertaken by men, including large-scale enterprises, while women's agricultural technology needs have been overlooked. Tools for agricultural production often do not suit women's physiology in terms of height and strength, or are not appropriate to women's tasks. This requires the development of cost-effective/affordable labour-saving technologies as well as technologies which can reduce the burden of use.[10] This is all the more urgent in the context of HIV and AIDS, which increases demands on women.

57. Access to basic infrastructure, technology and services is also a gender issue in view of women's household and subsistence management activities. For instance, women are disproportionately affected by indoor air pollution, caused by cooking meals in unventilated spaces on fires fuelled by wood, dung and other biomass.

[10] Carr, M. and M. Hartl (2010). *Lightening the Load: Labour Saving Technologies and Practices for Rural Women.* Rugby, UK: International Fund for Agricultural Development and Practical Action.

58. ICTs constitute another important tool that can help women in many aspects of their lives, by supporting economic empowerment, livelihoods, and access to education. Community ICT centres, for instance, can be an effective vehicle to help women acquire literacy and numeracy skills, learn about reproductive health and financial issues, and become socially and politically active. ICTs can also improve governance and access to government services, disseminate traditional knowledge, and improve and update traditional products and skills.

59. To ensure that ICTs fulfil their potential, however, access strategies must be implemented in ways that are appropriate to local situations and socioeconomic status. Barriers to women's access to ICTs include the opening times of community centres, restrictions on women's travel outside home and interaction with strangers, the cost of access and training, and negative stereotypes on women's ability to use technologies. In addition, women have lower literacy rates, and in the case of minority and indigenous groups, are more likely than men to only be proficient in local languages.

Recommendations

60. The Expert Group urges stakeholders to:

Labour-saving technologies and infrastructure

a) Promote the development and adaptation of labour-saving technologies and practices to reduce the workload of women at home and in their productive activities, including:
   - Improved shelter and housing design;
   - Improved access to sanitation and waste management and safe drinking water;
   - Improved clean energy access, including renewable energies;
   - Improved clean cooking technologies;
   - Improved food processing, preservation and storage technologies.

As part of the National Biogas Program in Rwanda, Heifer International provided farmers with cows, which provide milk, an important source of protein and income, but also manure, a source of fertilizer for crops and of biogas for cooking. The Government subsidized biogas collection tanks, which provide methane from decomposing manure, for cooking. The fuel is cleaner burning, eliminating the smoke that comes from other sources of fuel, and women and girls are no longer required to collect or buy firewood, saving both time and money and protecting the environment. Other partners include the Ministries of Finance and of Infrastructure, as well as Rabobank, SNV and GTZ, which provided micro-credit to farmers wishing to invest in a biogas digester.[11]

b) Explore public-private partnerships with various private sector actors, from SMEs to multinational corporations, to provide and improve infrastructure and technology.

[11] Devries, J. and D. Nierenberg (2010). For Poor Households in Rwanda, One Cow Makes a Difference. *The Huffington Post*, 24 March; and http://www.fmo.nl/smartsite.dws?ch=DEF&id=1733

c) Implement multi-stakeholder partnerships to make technologies widely available.
d) Work with local people, including women, to identify technology needs, and identify and use local resources.
e) Incorporate local and traditional knowledge in the choice and development of technologies.

Agriculture and food security

f) Ensure that international research institutions such as the Consultative Group on International Agricultural Research (CGIAR), national agricultural research systems, universities, NGOs, government agencies and the private sector enhance partnerships and collaborations with the purpose of integrating gender perspectives and the inputs of women producers into research and development.
g) Ensure that relevant Government departments collaborate to exchange resources and knowledge as well as training on gender dimensions of agriculture.
h) Undertake gender budgeting and gender audits of agricultural spending, and collect sex-disaggregated data on access to agricultural extension services.
i) Take measures to ensure gender balance in agricultural decision-making structures and institutions.
j) Increase the number of female agricultural extension officers.
k) Take into account the differential needs of women in the selection of varieties, crops and processing (taste, packaging, bio-fortification, nutrient-rich vegetables, and processing techniques).
l) Provide greater support to kitchen, backyard and urban garden cultivation and production, including through access to common land, and undertake more research on local indigenous vegetable varieties, as a means of improving women's production systems, diet, as well as biodiversity.
m) Work with leaders at the community level to illustrate how increasing the value of women's agriculture-based economic activity is of benefit to everyone, and bring women into community decision-making.
n) Ensure that science fairs highlight agricultural techniques and technology for the general public.

ICTs

o) Collect sex-disaggregated data on access to ICTs at the community and household levels.
p) Undertake market and regulatory reforms to promote widespread use and affordability of ICTs, and use universal service funds12 to extend networks to under-served areas, in particular rural areas, including through community ICT centres.

[12] Universal service funds subsidize the provision of ICT services to high-cost areas, for instance remote areas. Such funds may be financed by a national service charge on some telecommunication services.

The Rwanda Vision for 2020 is intended to move the country from an agriculture-based economy to a knowledge-based economy in 20 years. As a result, gender issues are integrated into ICT access, training and implementation strategies. The goal to provide wider access and connectivity to all is intended to be achieved through a mix of access strategies:
- Information Access Points or kiosks,
- Multipurpose Community Telecenters
- Encouraging the spread of ICT to homes,
- Encouraging rural areas to use ICT through the promotion of its benefits via various media: radio, TV and press.[13]

q) Consult with women and women's groups on ICT implementation and distribution strategies, and locate ICTs in or within reach of women's multiple social and communication networks, including women's organizations, schools, libraries, post offices, government offices, and health clinics.
r) Promote women's and girls' use of ICTs, and in particular of social networking tools and applications, as a tool to access and share information, including in the context of emergency situations.
s) Support accessible and assistive technologies for persons with disabilities.
t) Ensure that women have access to government services and information, including government-issued licences, certificates and permits, through web portals, mobile services, and mixed technologies.
u) Train women in using and maintaining ICTs, as well as developing content, applications and software, including free and open source software.
v) Promote the development of content that speaks to women's interests, responsibilities and activities, and ensure its accessibility, including through the use of local languages and audio-visual materials.

Supporting enterprise development, innovation and market access

61. Women's participation in entrepreneurship and innovation is key to job-creation, wealth-generation and national economic growth. The participation of women in the establishment, management and leadership of medium and large-scale enterprises, including technology-related companies, is an important factor for national innovation.

62. Technology relates to entrepreneurship in two main ways. Enterprises may offer products or services directly related to technologies, such as improved pumps, or in the ICT sector, data processing, telephone access, and cyber cafes. Technology can also support enterprises through improved production, processing, or communication processes. For example, ICT can make business activities more efficient by enabling producers to track weather patterns, access financing, or acquire new skills.

[13] Bayingana, M. (2007). Gender & Poverty Reduction: Policy Action Items of the Rwanda ICT Policy-NICI 2010. Presentation at ICTs, Gender and e-Government Workshop, Maputo, Mozambique, 28-30 May.

63. Overall, women's enterprises tend not to use technology to the same extent as men's enterprises, due to lower educational level, less resource support and less comfort with technology, among others. In addition, in many countries, men tend to use mobile technologies that are more sophisticated, and to use them in a more sophisticated manner.[14]

Launched as a tripartite initiative of the Department of Biotechnology, the Tamil Nadu state government, and the M. S. Swaminathan Research Foundation the Golden Jubilee Biotech Park for Women in India aims to improve opportunities for women scientists, but also to use science to improve women's lives, by supporting women biotechnology entrepreneurs in developing and marketing products. The governing body of the Park also has members from research and development institutions, financial institutions, and women entrepreneurs. The Park offers long- and short-term leases, land modules for building factories, project assessment and support, project identification and technology sourcing, consultancy advice, market linkages and training.[15]

64. Enterprises function within a larger value chain. The value chain describes the full range of activities that firms and workers do to bring a product from its conception to its end use and beyond, including design, production, marketing, distribution and support to the final consumer. Global value chains analysis differentiates between producer-driven chains in which large, usually transnational manufacturers play the central role in coordinating production networks, and buyer-driven chains, in which large retailers, marketers and manufacturers set up decentralized production networks in a variety of exporting countries, typically located in the South. The latter present an opportunity for small-scale women producers and cooperatives to produce specialized crops and products for international export, relying on labour-intensive technologies.

65. Gendered patterns of behaviour can be found along global value chains, from production to processing. A gender approach to value chain analysis and programme design can provide an understanding of men's and women's access to productive resources and opportunities to add value, both as individual and group enterprises; and of how the interaction between gender and power relations, regulations, and trade impacts the distribution of value along the value chain.

66. In addition, it is important to factor in intellectual property issues. Women traditionally hold much local and indigenous knowledge, but may not own it or derive financial benefits from it. In particular, local women are likely to lack knowledge of the patenting process and resources to support a patent application.

Recommendations

[14] Huyer, S. (2008). Gender and the Core ICT Indicators. Presentation at the Global Event on Measuring the Information Society, Geneva, Partnership on Measuring the Global Information Society, 27-29 May.
[15] Nair, S. (2009). Glad Tidings! *Biotech News.* Vol. IV, No. 5, October.

67. The Expert Group urges stakeholders to:

a) Support the development of small-scale innovation systems by:
   i) Undertaking a mapping analysis of the gender dimensions of value chains and innovation systems to assess the location, participation and benefits of women and men and the role of technology in the system, as well as their access to reliable information on resources, export laws and regulations, cross-border transactions, supply and production networks;
   ii) Training women in entrepreneurship;
   iii) Continuing to analyze shifts in power relations, and access to benefits and resources between women and men as these systems develop or continue.
b) Test and investigate appropriate structures, funding, regulation and training to support small, micro and medium business development based on S&T knowledge, technology and innovation systems.
c) Sponsor inter-departmental collaborative technology-based incubators for women's enterprises including ministries of women/gender equality, industry, S&T, trade, economics, labour.
d) Promote women's access to services such as marketing, credit, business advice and day care, in order to support innovation systems and women's enterprises.
e) Create an enabling policy environment, for instance by ensuring that tax or trade policies support the development of women's enterprises.
f) Ensure women's access to credit and financial services at all levels, from micro-credit to venture capital, to support the expansion of women's enterprises, including by:
   i) Addressing the specific constraints faced by women in accessing financial services;
   ii) Instituting women's banks or women's funds;
   iii) Mobilizing electronic and mobile-based banking services.

M-PESA is a mobile phone-based money transfer service in Kenya, which allows users to complete basic banking transactions without visiting a bank branch. It is used for transfers to business associates and family, as well as for international remittances.

g) Ensure that scientists and technologists work collaboratively with women's groups and entrepreneurs to develop products and increase process efficiency.
h) Encourage ICT-based strategies to support market access and enterprise development, including by:
   i) Promoting development of appropriate software and mobile applications, including free and open source software, to support SMEs;
   ii) Providing vocational training, credit and other forms of business support for women to run ICT-based service enterprises;
   iii) Ensuring structures are in place for training and technical support.

When women of the Songtaaba Association, an organization that markets shea butter skin care products in Burkina Faso, started using ICTs, their profits more than doubled. The Association set up telecentres in two villages that are entirely managed by the rural women trained by the Association. Within two years of having set up a website, profits increased by 70 per cent.[16]

i) Ensure that women's groups and standardization and certification bodies (e.g. ISO, CODEX and national regulatory bodies) collaborate to increase certification and improve quality control, for instance on plant health, organic food, and biodiversity, thereby expanding market opportunities for women's enterprises.
j) Promote women's inventions and protect women's intellectual property.
k) Research and address the implications of trade regimes for intellectual property rights (IPRs) of local and indigenous common-property knowledge.

The San people in Southern Africa receive a share of profits from the drug extracted from hoodia cactus which suppresses hunger and which they have been eating for thousands of years.[17] In India, the government and textile producer associations are working with weaver and textile groups to obtain geographical indication status[18] on their textile designs and products. The Khambhat Weavers' Association, the Ahmedabad Textile Industry's Research Association (ATIRA), the Indian Merchants Chamber (IMC), Mumbai, and the United Nations Conference on Trade and Development (UNCTAD) India, are working with weavers to patent the Panetar sari.[19]

C. Gender analysis and innovations in science, knowledge, and technology design

68. Science and technology research, results, epistemologies, products, and processes are commonly viewed as value neutral. S&T, however, is influenced at least in part by cultural, economic and social factors, and as a result, can be affected by conscious and unconscious gender bias.

69. Gender bias limits excellence in S&T, and therefore reduces the benefits that research and development brings to society. For example, in medical research, data arising from studies conducted mainly on males are often extrapolated to both sexes, despite the biological and social differences between women and men.

[16] Melhem, S. and N. Tandon (2009). Information and Communication Technologies for Women's Socio-economic Empowerment. *World Bank Group Working Paper Series*, 30 June.
[17] World Health Organization (2003). Hunter-Gatherers Win Profit-Sharing Deal for Obesity Drug. *Bulletin of the World Health Organization*, Vol. 81, No. 5, 313-386. http://www.who.int/bulletin/volumes/81/5/News0503.pdf
[18] According to the World Intellectual Property Organization, "a geographical indication (GI) is a sign used on goods that have a specific geographical origin and possess qualities, reputation or characteristics that are essentially attributable to that origin. GIs are protected in accordance with international treaties and national laws under a wide range of concepts." See http://www.wipo.int/geo_indications/en/.
[19] Halliday, A. (2010). UN Body Shows a Global Dream to Weavers. *India Express.com*, July 9. http://www.indianexpress.com/news/un-body-shows-a-global-dream-to-weavers/644150/.

When drugs are not tested on females, the cost to human life and to business is high. Between 1997 and 2000, ten drugs were withdrawn from the market in the United States because of life-threatening health effects – four of these showed greater severity in women.[20] Preclinical research where testing was done primarily on male animals has been evoked as an explanation.[21]

70. This example highlights the importance of integrating gender analysis into S&T research and design. First, including a gender perspective in S&T development stimulates creativity, enhances scientific knowledge production as well as technological and business innovations, and leads to greater social applicability.[22] Secondly, ignoring a gender framework wastes resources and affects profits. In industrialized countries, women's purchasing power has risen dramatically in recent decades, but products do not necessarily take women's needs or preferences into account.[23] This makes gender-sensitive innovation and a focus on female preferences for technology products an attractive but overlooked business case for many industries.

71. Thirdly, the use of gender analysis also touches on women's right to health and well-being, which Governments have an obligation to protect and promote. In some sectors, failing to perform gender analysis has serious – and possibly fatal – consequences for women. For example, women are often left out of basic engineering design. Automobile crash test protocols, for example, define short people (mainly women, but many men as well) as 'out-of-position' drivers because they sit too close to the steering wheel. Not all tests adequately take into account 'out-of-position' drivers, and this group is more likely to be injured in accidents.[24] Medical research provides another illustration: as a result of gender bias, adverse drug reactions occur more frequently in women than in men. For example, over-the-counter antihistamines, initially tested in men, can lead to potentially fatal heart arrhythmia in women.[25]

72. It is important to highlight how gender analysis also benefits men. Osteoporosis is a disease traditionally seen as affecting post-menopausal women, and men have historically been excluded from osteoporosis research. Examining sex in diagnostic reference models in osteoporosis research has turned attention to understanding the disease in men. As a result, diagnostic criteria are beginning to include men.

[20] United States General Accounting Office (2001). Drug Safety: Most Drugs Withdrawn in Recent Years Had Greater Health Risks for Women. Washington, DC: US Government Publishing Office.
[21] Wald, C. and C. Wu (2010). Of Mice and Women: The Bias in Animal Models. *Science*, 327, 1571-1572.
[22] Schiebinger, L. (2008). *Gendered Innovations in Science and Engineering.* Stanford, CA: Stanford University Press.
[23] Schroeder, K. (2010). Gender Dimensions of Product Design (EGM/ST/2010/EP.13).
[24] Hallman, J., N. Yoganandan, and F. Pintar (2008). Torso Side Airbag Out-Of-Position Evaluation Using Stationary and Dynamic Occupants. *Biomedical Sciences Instrumentation, 44,* 123-128.
[25] Kaiser, J. (2005). Gender in the Pharmacy: Does it Matter?, *Science,* 308, 1572.

73. The issue of gender biases in knowledge production and product design is linked to that of women's participation in S&T employment and in production processes. Including women as researchers and innovators represents more than a gain in talent and skilled labour: it also leads to the inclusion of the specific types of knowledge women develop and maintain as a consequence of gender roles.

74. Rural and indigenous women are responsible for food production and medical care in much of the developing world, and possess unique intellectual resources (such as knowledge about the medicinal properties of plants and about preserving biodiversity) as well as material resources (such as seeds for drought-resistant crops).[26] Women's ethnobotanical knowledge can help local communities secure foods and medicines, prevent deforestation, and better adapt to climate change.[27]

75. In developed countries, the exclusion of women from the design and development of new information technologies (IT) has produced artificial intelligence (AI) with limited capacity. AI has traditionally been modelled on rational-cognitive processes associated with males. More gender sensitive technologies need to be developed such as sociable robots with Ambient Intelligence (AmI) that incorporates 'social' and 'emotional' learning.[28]

76. Women's needs and preferences are not necessarily taken into account in research and development, which traditionally has been mainly carried out by men (see also previous section). This can be attributed to a number of factors, including the lack of gender balance in product design teams and the lack of consideration of gender differences in determining end-user preferences. Efforts to cater to female clientele often focus on superficial adjustments to the exterior design of products, a practice referred to as 'pinking'. The design research project 'Female Interaction', sponsored by the Danish Government, focuses on understanding the needs and preferences of female users and establishing guidelines to develop gender-responsive products. By means of operational guidelines for gender-sensitive innovation, the technology industry can contribute largely to empowering women by developing technology that responds to their everyday needs and preferences.

77. Some institutions have begun to recognize the importance of gender analysis. The European Union's Directorate-General for Research, in its sixth framework programme for research, advised scientists to address, in their research design, whether and in what sense sex and gender are relevant to the objectives and the

[26] World Intellectual Property Organization (2006). WIPO Addresses Indigenous Issues at UN Forum. *WIPO Magazine, August (4)*, 19.
[27] Suminguit, V. (2005). Indigenous Knowledge Systems and Intellectual Property Rights: An Enabling Tool for Development with Identity. Paper prepared for the Workshop on Traditional Knowledge, the United Nations and Indigenous Peoples, Panama City.
[28] Breazeal, C. (2002). *Designing Sociable Robots*. Cambridge: Massachusetts Institute of Technology Press.

methodology of the project.[29] Likewise, a number of scientific journals, for example the *Journal of the American College of Cardiology* and the American Heart Association journal *Circulation*, require the use of gender methodology when selecting papers for publication. *Nature* is considering adopting this policy.

78. Such initiatives, however, have had limited success because few stakeholders – including policy makers, business executives, designers of technologies, researchers and academic administrators – are proficient in gender analysis. Incentives to use gender analysis in research and product design, and to monitor and evaluate performance in doing so, are often missing. In addition, methodologies may be poorly applied. It is not enough to 'add in' a gender component at a later stage of a project. Research must consider how sex and gender factor in from the beginning, that is, from the proposal concept to the final reports, publications, and any other outputs including patents.

79. Another difficulty is the need for methods of gender analysis to be both globally agreed upon and locally customizable: these methods must work across the modern sciences, ethnosciences, and indigenous knowledge systems. This would allow researchers and engineers to systematically analyze problems and to better seek innovative solutions that take the full complexity of factors into account.

Recommendations

80. The Expert Group urges stakeholders to:

Gender analysis and methodologies

a) Undertake a systematic review of existing methods of gender analysis for S&T.
b) Compile and extend these methods and concepts to all sciences, medicine, engineering and technology. When developing methods, it is important to:
   i) Draw methods from all regions;
   ii) Draw methods from across disciplines;
   iii) Analyze differences and similarities across and between women and men;
   iv) Analyze other factors that interact with sex and gender, such as age, ethnicity, cultural factors;
   v) Analyze sex and gender in research subjects at all levels, for example in the life sciences from the single cell to animal models to human subjects and processes;
   vi) Include users' perspectives, for instance by means of user-driven participatory design methods.

[29] European Commission (2003). *Vademecum: Gender Mainstreaming in the 6th Framework Programme– Reference Guide for Scientific Officers/Project Officers.* Brussels: Directorate-General for Research; European Commission (2001). *Gender in Research: Quality of Life and Management of Living Resources.* Brussels: Directorate-General for Research; European Commission for Community Research (2004). *Gender and Excellence in the Making.* Brussels: Directorate-General for Research.

c) Develop instruments to mainstream the use of gender analysis, such as guidelines and checklists for practitioners.
d) Develop gender analysis in research and design throughout the lifecycle of the project from setting research priorities, to choosing a specific subject for research, to planning the research process, to collecting and analyzing data.
e) Ensure that research priorities, goals, and outcomes meet girls' and boys', women's and men's specific needs, as identified by gender analysis, including through questions such as:
   - How are priorities set in the context of limited resources?
   - Do women and men from different socioeconomic backgrounds and cultures benefit from a particular project?
f) Establish multi-disciplinary research and design centres and networks to develop gender analysis and methods.

Capacity development and training

g) Disseminate research findings based on gender analysis to practitioners by producing guidelines and case studies applicable to their work.
h) Train the current generation of researchers in gender concepts and methodology and require such training for personnel in research, programme and project planning, business management, implementation, monitoring, evaluation, and innovation, including through:
   i) Trainer programmes, where opinion leaders among scientists and engineers learn gender analysis methods and train their peers and the scientific community;
   ii) On-the-job training for junior and senior scientists and engineers, staff, administrators, and technicians.
i) Train the next generation—boys and girls, men and women—by mainstreaming gender issues and methods of gender analysis into curricula at the primary, secondary, and tertiary levels, including in core science, medicine, and engineering courses.
j) Develop national education policies to incorporate gender methods, concepts, and issues into curricula at all levels.
k) Integrate gender analysis, results and concepts into textbooks, training materials, interactive programmes, etc.

Funding and partnership

l) Identify S&T leaders in academia, private sector, government, international, and non-governmental organizations to support mainstreaming gender analysis into institutions and knowledge production.
m) Convene and fund an international expert group for gender, science, technology and innovation, consisting of gender experts working in national, international, governmental and non-governmental organizations, professional societies, and the private sector, to develop innovative methods, terms, and concepts for doing gender analysis in research, technology, and design for scientists, engineers, policy makers, and teachers.

n) Link funding to the formation of gender-balanced research and development teams that conduct gender-responsive research, through a variety of incentives to achieve high quality research, products, services and processes, including through:
   i) Encouraging granting agencies to require applicants to include gender analysis in research design and methodology from the ideation to the final product;
   ii) Using gender analysis in the funding and reviewers committees to ensure that the selected projects consider specific different priorities, needs, interests and resources for both men and women.

Assessment

o) Implement, revise, and develop monitoring and evaluation instruments and tools to ensure that gender analysis is carried out, starting from the ideation, to the plan, the budgets, and the outcomes.
p) Set up standards and metrics for evaluating and benchmarking the extent to which gender analysis is integrated into research, technology and design, including through harmonizing methodologies, review processes, recommendations, guidelines, procedures, and standardizing comparable data across countries and disciplines.
q) Develop mechanisms to ensure the immediate transfer of research findings equitably to both men and women end-users; this is also useful for teaching purposes.
r) Ensure that regulatory agencies, such as the Federal Drug Administration in the United States of America and the European Medicines Agency in the European Union, adopt and promote the use of gender analysis.

Motivation and change management

s) Promote access of women and men, both inside and outside the research establishment, to research findings and guidelines on gender analysis and innovation, including by:
   i) Collecting and communicating guidelines, tutorials, check-lists and best practice cases for gender-responsive innovation, as well as highlighting the negative consequences of disregarding factors related to sex and gender, particularly in the field of health;
   ii) Encouraging editors of peer-reviewed journals to require sophisticated use of gender analysis in methodology when selecting papers for publication;
   iii) Identifying S&T leaders in academia, governments, private sector, international and non-governmental organizations to support the mainstreaming of gender analysis into institutions and knowledge production;
   iv) Appointing acknowledged gender-sensitive ambassadors of both sexes in different regions and fields, to serve as role models and demonstrate and communicate the positive effects of gender-responsive innovation, not only on projects but on entire organizations, basing their communication on sex-disaggregated data;

v) Publicizing best practice examples and recognizing excellence in gender-responsive innovations through regular awards.

Raising public awareness

t) Demonstrate to the public the impact of gender bias in science, medicine, technology, technical products, services, processes, and organizational systems.

u) Demonstrate to the public the potential benefits of employing methods of gender analysis for excellence in science and technology design.

v) Popularize the results of gender analysis among the general population, including parents, educators (at all levels including vocational trainers), journalists, and the mass media.

ANNEX I

List of Participants

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ANNEX II

List of Documents

BACKGROUND PAPERS

EGM/ST/2010/BP.1 *Gender, science and technology*
Londa Schiebinger (Consultant)

EGM/ST/2010/BP.2 *Women's and girls' access to and participation in science and technology*
UNESCO

EXPERT PAPERS

EGM/ST/2010/EP.1 *Women, development, and the knowledge society*
Judith Zubieta (Mexico)

EGM/ST/2010/EP.2 *Gender dimensions of science and technology: African women in agriculture*
Judi Wakhungu (Kenya)

EGM/ST/2010/EP.3 *Gender dimensions of science and technology in agriculture and climate change: A case study*
Mereseini Seniloli (Fiji)

EGM/ST/2010/EP.4 *Advancement of women in rural India*
Viswanath Venkatesh (India)

EGM/ST/2010/EP.5 *Gender, science anxiety, and science attitudes: A multinational perspective*
Jeffry Mallow (United States of America)

EGM/ST/2010/EP.6 *Effective policies for supporting education and employment of women in science and technology*
Kong-Ju-Bock Lee (Republic of Korea)

EGM/ST/2010/EP.7 *Science, technology and innovation policies and funding*
Sophia Huyer (Canada)

EGM/ST/2010/EP.8 *Increasing women's participation in science, mathematics and technology education and employment in Africa*
Verdiana Grace Masanja (United Republic of Tanzania)

EGM/ST/2010/EP.9 *Women's and girls' participation in science and technology in North Africa*

Monia Cheikh (Tunisia)

EGM/ST/2010/EP.11[30] *What has worked in Europe to increase women's participation in science and technology*
Nikolina Sretenova (Bulgaria)

EGM/ST/2010/EP.12 *Sex and gender analysis in medical and pharmacological research*
Flavia Franconi (Italy)

EGM/ST/2010/EP.13 *Gender dimensions of product design*
Klaus Schroeder (Germany/Denmark)

OBSERVER PAPERS

EGM/ST/2010/OP.1 International Labour Office (ILO)

EGM/ST/2010/OP.2 French Association of Women Engineers (Femmes Ingénieurs)

EGM/ST/2010/OP.3 American Association of University Women (AAUW)

EGM/ST/2010/OP.4 Organization for Women in Science for the Developing World (OWSDW)

INFORMATIONAL DOCUMENTS

EGM/ST/2010/INF.1 Aide-mémoire

EGM/ST/2010/INF.2 Information note for participants

EGM/ST/2010/INF.3 Programme of work

EGM/ST/2010/INF.4 List of participants

EGM/ST/2010/INF.5 Experts' biographies

EGM/ST/2010/INF.6 List of documents

EGM/ST/2010/INF.7 Procedures

[30] As one expert had to cancel, there is no EGM/ST/2010/EP.10.

ANNEX III

Programme of Work

Tuesday, 28 September 2010

8.30 a.m.	Registration of experts starts
9.00 a.m.	Briefing of experts (election of officers) - *closed meeting*
9.30 a.m.	Registration of observers starts

Plenary session

10.00 a.m.	Welcome address and opening of meeting
	S. Gülser Corat, Director, Division for Gender Equality, Office of the Director-General, UNESCO
	Sylvia Hordosch, Acting Chief, Gender Analysis Section, United Nations Division for the Advancement of Women (now part of UN Women)
10.20 a.m.	Introduction of experts, review of programme of work, and information on working methods
10.40 a.m.	Presentation of background paper and discussion
	Londa Schiebinger: *Gender, science and technology* [EGM/ST/2010/BP.1]
11.30 a.m.	Break
11.50 a.m.	Presentation of UNESCO paper and discussion
	S. Gülser Corat: *Women's and girls' access to and participation in science and technology* [EGM/ST/2010/BP.2]
12.30 p.m.	Lunch break
1.45 p.m.	Presentations by experts and discussion **Theme 1: Use of science and technology for development**

Judith Zubieta (Mexico): *Women, development, and the knowledge society*
[EGM/ST/2010/EP.1]

Judi Wakhungu (Kenya): *Gender dimensions of science and technology: African women in agriculture*
[EGM/ST/2010/EP.2]

Mereseini Seniloli (Fiji): *Gender dimensions of science and technology in agriculture and climate change: A case study*
[EGM/ST/2010/EP.3]

Viswanath Venkatesh (India): *Advancement of women in rural India*
[EGM/ST/2010/EP.4]

3.45 p.m. Break

4.00 p.m. Presentations by experts and discussion
Theme 2: Women's participation in science and technology education and employment

Jeffry Mallow (United States of America): *Gender, science anxiety, and science attitudes: A multinational perspective*
[EGM/ST/2010/EP.5]

Kong-Ju-Bock Lee (Republic of Korea): *Effective policies for supporting education and employment of women in science and technology*
[EGM/ST/2010/EP.6]

Sophia Huyer (Canada): *Science, technology and innovation policies and funding*
[EGM/ST/2010/EP.7]

5.30 p.m. Closing of meeting – day 1
Reception by the UNESCO Division for Gender Equality

Wednesday, 29 September 2010

Plenary session and working groups

9.00 a.m. Summary of day 1 by Rapporteur

	Introduction to work by Chair
9.30 a.m.	Presentation by experts and discussion **Theme 3: Regional perspectives on women's participation in science and technology education and employment** **Verdiana Grace Masanja** (United Republic of Tanzania)**:** *Increasing women's participation in science, mathematics and technology education and employment in Africa* [EGM/ST/2010/EP.8] **Monia Cheikh** (Tunisia)**:** *Women's and girls' participation in science and technology in North Africa* [EGM/ST/2010/EP.9] **Nikolina Sretenova** (Bulgaria)**:** *What has worked in Europe to increase women's participation in science and technology* [EGM/ST/2010/EP.11]
11.00 a.m.	Break
11.15 a.m.	Presentation by experts and discussion **Theme 4: Gender biases in scientific research and technology design** **Flavia Franconi** (Italy)**:** *Sex and gender analysis in medical and pharmacological research* [EGM/ST/2010/EP.12] **Klaus Schroeder** (Germany/Denmark)**:** *Gender dimensions of product design* [EGM/ST/2010/EP.13]
12.45 p.m.	Lunch break
2.00 p.m.	Introduction to working groups by Chair Working groups
4.00 p.m.	Break
4.15 p.m.	Working groups (cont'd)
5.30 p.m.	Closing of meeting – day 2

Thursday, 30 September 2010

Working groups

9.00 a.m.	Summary of day 2 by Rapporteur
9.30 a.m.	Working groups (cont'd)
11.00 a.m.	Break
11.15 a.m.	Working groups (cont'd)
12.45 p.m.	Lunch break
2.00 p.m.	Working groups (cont'd)
4.00 p.m.	Break

Plenary session

4.15 p.m.	Report back on discussions of the working groups
5.30 p.m.	Closing of meeting – day 3

Friday, 1 October 2010

Plenary session

9.00 a.m.	Presentations by working groups
	Discussion of findings and recommendations from working groups
11.00 a.m.	Break
11.15 a.m.	Discussion of findings and recommendations from working groups (cont'd)
12.45 p.m.	Lunch break
2.00 p.m.	Consolidation of findings and recommendations
4.00 p.m.	Break

4.15 p.m.	Adoption of findings and recommendations
4.45 p.m.	Closing remarks

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Open and Distance Education for the Marginalized (by UNESCO Bangkok, ICT in Education)

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To various degrees, marginalization and vulnerability exist almost everywhere in the world. In some contexts these groups are in smaller numbers, while in others, the concept of being "marginalized" becomes more controversial, as they may constitute most of the population, depending on the context. The consequent question arises as to who and where these marginalized groups are, why they are marginalized, and how their challenges can be addressed in an inclusive and efficient way. Evaluating some of the national policies and data available on the vulnerable and marginalized, five categories of marginalization emerge:

- gender-related (girls)
- culture-related (castes, tribes, religious groups)
- location-related (refugees, conflict-affected areas, child soldiers, nomads)
- poverty-related (working children, single mothers), as well as
- special groups (disabled children, children living with HIV and AIDS, orphans)

(UNESCO, 2010, p. 5).

Starting with the Jomtien Declaration in 1990, UNESCO had committed to serving the underprivileged groups, including "the poor; street and working children; rural and remote populations; nomads and migrant workers; indigenous peoples; ethnic, racial and linguistic minorities; refugees; those displaced by war; and people under occupation." Ten years later, in line with this pledge, the Dakar Framework for Action committed to serving the "children in difficult circumstances and those belonging to ethnic minorities." Most recently, through the promise of the Education for All Movement as well as the Millennium Development Goals, the governments together with the UN and other international organizations have been planning and implementing concrete policies and programmes to improve access to and quality of education, ensure girls' inclusion in schools, and reaching the marginalized. Today, we can say through evidence that gender parity in primary and secondary education has drastically improved (UNESCO, 2014). However, as we come closer to the deadline date for

these goals, we can see that the most marginalized communities are still denied the opportunities for education (UNESCO, 2014).

With the endless array of educational opportunities available and the advent of educational technologies, these groups could or should be put at an even higher priority, receiving timely, relevant and quality education. In response to different needs, technologies can serve various types of learners, cutting the physical and mental distance between the learner and knowledge acquirement. Open and distance education (ODL) is one of the educational delivery modes that has been increasingly explored for the marginalized. This new approach to education frees learners from the constraints of time and space with a more flexible approach to learning (Okebukola, 2013). Students engaging in ODL can simultaneously work or carry out their daily responsibilities. The three main characteristics of open education are: "flexibility, technology-mediation and learner control", making this approach free and with an array of choices of what, where and how to learn (Okebukola, 2013). It does not only broaden access, but can also improve the quality of education, collaboration, and autonomy of the students. With technology-enabled ODL, the change from the traditional classroom to a virtual one can become almost unnoticeable.

However, some of the challenges remain in providing open and distance education to the marginalized. When the marginalized groups rarely have access to education, it's not surprising that they have no access tothe latest educational technology. The second wave of digital gap, or knowledge gap caused by unequal access to digital resources, becomes a bigger challenge. Despite this hindrance and lack of inclusion of the marginalized groups in advanced technologies as well as education, many innovative projects around the world have utilized the available technology in smart and efficient ways, with a focus on the lower-end devices, such as radio, mobile phones, or television.

The more useful and successful technologies for the marginalized could instead utilize the "lower-end" gadgets, reaching those who do not have access to tablets, smart phones, or laptops. For example, radio is still utilized as the main source of information, reaching the many rural or hard-to-reach areas. The UNESCO World Radio Day (13 February) celebrates this timeless technological tool, highlighting its unique power to connect people and information throughout every corner of the globe. Radio can allow our listeners to not only learn information, but also develop and share it.

As for the mobile phones and their unique as well as effective utilization in some parts of the world, a programme in Pakistan that uses basic cell phones, the Bunyad Mobile-Based Post-Literacy Programme, focused on supporting young rural women through materials sent to their cell phones. Moreover, additional messages on social issues, value of education, and then environment are also provided. Similarly, the project in Afghanistan, Using Mobile Phones to Accelerate Literacy Education and Empower Afghan Women, provided literacy lessons through the use of mobile phones, as well as information on human rights, health, nutrition, banking, and more. It also aimed to inspire motivation among marginalized girls and women. The Ustad Mobile programme in Afghanistan, addresses the issue of the access to education for women in challenging settings. It provides literacy lessons for simple phones, with audio and video learning tools through an open source application, which contains local content, and can be easily maintained by the users.

In reference to the usage of TVs for education, such projects as the Development of Community Television in Rio de Janeiro in Brazil provides educational and cultural programmes for the low-income and disadvantaged communities, shares community news and events, allows for local debates, notifies the community of important services, such as vaccination opportunities, and more. Since the content of this channel is the most important

aspect of the project, non-governmental organisations, communication students from the city's universities, and local residents who show interest in the local media are involved in its development. Additionally, training for youth and adults is provided.

As the abovementioned programmes have tried to reach the vulnerable and marginalized populations, and although open and distance education can help communities learn independently, the human aspect of these initiatives is crucial. Frequently, learners need reminders, motivation and adequate time management skills in order to continuously learn and utilize the online platforms. Many of the distance education programmes, thus, include actual teachers, or facilitators that can respond to and remind their students to partake in a discussion, provide feedback, or answer questions. Some projects also utilize community centers or libraries for community needs and educational provision or support. IREX's Beyond Access programme, Libraries for Development in Peru, focus on libraries as knowledge, culture, and information centers for the communities. It aims at decreasing the digital and information gaps in the country. While located in remote areas, these libraries can help address the educational and technological needs of their communities, becoming centers for technological innovation as well as learning. Another Beyond Access project, Powering Economic Opportunity in Davao City in the Philippines, also utilizes libraries as places for information as well as digital literacy and skills training. Additionally, this project aims to support the Philippines E-Government Plan and the Philippine Digital Strategy, which focus on providing access to ICTs, especially for the marginalized.

In addition to the learner side of online and distance education, a recent UNESCO project in partnership with Chung-Dahm Learning Inc., "Updating UNESCO Collection of Digital Resources for Teaching and Learning: Supporting the Effective ICT-pedagogy Integration for Teachers and Teacher Educators Programme", aims to provide teachers and teacher educators with a new collection of open and free digital contents that are developed in line with the core curriculum standards for secondary education in Mathematics and Science in the Asia Pacific region. These can be accessed both online (downloadable from the web), as well as offline (CD ROM or portable drive), depending on the ICT infrastructure in the least developed countries, which are the focus of this project. This is an effort to strengthen teachers' professional development in the area of innovative and effective ICT-Pedagogy integration, as well as make this digital content widely available to countries that face infrastructure limitations. The package will be available for use soon.

With the evidence of radio, mobile phone and TV effectiveness as educational resources in many rural, disadvantaged and remote contexts, the opportunities for innovative, relevant and effective programmes can be endless. Once the cloak of the latest gadget is taken off, one can see that it is not the technology in the end that changes the learning outcomes, or provides a boost in motivation. It is the competent teachers, technical support, strong leadership, and the adequate identification of the most usable technology that has contextualized, appropriate and useful content for its end users. As the 2010 Education for All Global Monitoring Report on

Reaching the Marginalized points out, there is still a long road ahead of us to reach the marginalized. "Unless special efforts are urgently taken to extend educational opportunities to the marginalized, the poorest countries may take several generations to achieve universal completion of primary and lower secondary education as well as universal youth literacy…" (UNESCO, 2014, p. 41).

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References:

Beyond Access. (n.d.). *Libraries for Development in Peru.* Retrieved from

beyondaccess.net/projects/peru/

Beyond Access. (n.d.) *Powering Economic Opportunity in Davao City.* Retrieved from beyondaccess.net/projects/philippines/

Okebukola, P. (2013). The Changing Landscape of Open and Distance Leraning and the Impact of Emerging Technologies. Lecture conducted from Lagos State University. Retrieved from www.okebsf.org/publications/OKEBUKOLA-The%20Changing%20Landscape%20of%20Open%20and%20Distance%20Learning%20and%20the%20Impact%20of%20Emerging%20Technologies.pdf

Paiwastoon. (n.d.). *Mobiles for Literacy: Adult literacy mLearning on simple mobile phones.* Retrieved from svr1.paiwastoon.net/mliteracy/

Simpson, O. (2012). *Supporting Students for Success in Online and Distance Education.* New York, NY: Routledge. Retrieved from https://www.google.co.th/books?hl=en&lr=&id=kt-YE8GKJyMC&oi=fnd&pg=PR5&dq=open+and+distance+education&ots=CEj_MOLa_P&sig=-0t-4_QJHkL0th4slO1dP5kUFjc&redir_esc=y#v=onepage&q=open%20and%20distance%20education&f=false

UNESCO. (n.d.). *Development of Community Television in Rio De Janeiro.* Retrieved from www.unesco-ci.org/ipdcprojects/content/development-community-television-rio-de-janeiro

UNESCO. (n.d.). *Using Mobile Phones to Accelerate Literacy Education and Empower Afghan Women.* Retrieved from www.unesco.org/new/en/unesco/themes/icts/m4ed/unesco-mobile-learning-week/speakers/sakena-yacoobi/

UNESCO. (2000). The Dakar Framework for Action. *Education for All: Meeting our Collective Commitments.* Retrieved from unesdoc.unesco.org/images/0012/001211/121147e.pdf

UNESCO. (2010). EFA Global Monitoring Report 2010. *Reaching the Marginalized.* Retrieved from www.unesco.org/new/en/education/themes/leading-the-international-agenda/efareport/reports/2010-marginalization/

UNESCO. (2014). EFA Global Monitoring Report 2013/4. *Teaching and Learning: Achieving Quality for All.* Retrieved from unesdoc.unesco.org/images/0022/002256/225660e.pdf

UNESCO. (2015). *World Radio Day.* Retrieved from www.diamundialradio.org

UNESCO-IIEP. (2010). Background paper prepared for the Education for All Global Monitoring Report 2010. *Reaching the marginalized.* "Educational Marginalization in National Education Plans". Retrieved from unesdoc.unesco.org/images/0018/001866/186608e.pdf

UNESCO-UIL. (n.d.). *Mobile-Based Post Literacy Programme*. Retrieved from www.unesco.org/uil/litbase/

World Education Forum. (2000). *The Conference: World Declaration on Education For All.* Retrieved from www.unesco.org/education/wef/en-conf/Jomtien%20Declaration%20eng.shtm

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