Fostering Equity in Higher Education

Compendium of Practical Case Studies

PROMOTING FEMALE PARTICIPATION IN STEM

March 2014
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INTRODUCTION

In November 2013, the OECD consulted the IMHE Governing Board on the strengths and weaknesses of the Membership package products and services in order to improve their value and usefulness to members. With respect to the Quarterly Briefs (the What it Means for Higher Education series), participants suggested that this series would benefit from complementing the policy-oriented content of these Briefs with practical case studies highlighting how member institutions tackle specific issues in practice. Accordingly, this new approach has been tried out in the March 2014 issue of the Quarterly Brief. This Brief takes a closer look at equity and gender balance issues based on the PISA 2012 results, and examines the implications for higher education.

Therefore, IMHE Members were asked to flag any initiative they may have adopted in their institutions to: provide academic support to under-prepared students, attract and retain disadvantaged students and help them reach graduation, promote female enrolments in scientific programmes, use role models (whether female scientists or resilient disadvantaged students) to foster students’ self-confidence, or foster attitudes that are associated with successful higher education (autonomy, perseverance in problem-solving, self-efficacy, etc.).

The two compendia (Fostering Inclusion of Disadvantaged Students and Promoting Female Participation in STEM) show all the practical cases that the Secretariat received and they have been sorted according to their thematic focus. The contributions are included in the state they in which they were submitted by the Members, with some minor proof editing by the Secretariat.
Australian Government’s Higher Education Loan Program (HELP)

In 2012, more women than men were enrolled in courses at the bachelor level with women accounting for 57.2 per cent of students. Women comprised 58.5 per cent of students undertaking post-graduate courses. More women than men now hold higher education qualifications. In 2013, among people aged between 25 and 64 years, 49.4 per cent of women held a Bachelor degree or higher compared to 39.8 per cent of men.

Women’s participation in higher education study has traditionally been concentrated in three main areas - health, education, and society and culture. There continues to be a wide gap between the number of women and men enrolled in these fields of study. In 2012, nearly twice as many women as men were enrolled in society and culture courses. Women’s enrolments in health outnumbered men’s by 2.7 to 1 while women’s enrolments in education outnumbered men’s by 3.2 to 1. In 2012, men outnumbered women in information technology and engineering courses by 4.7 to 1 and 5.9 to 1 respectively.

The Australian Government’s Higher Education Loan Program (HELP) assists eligible students pay their student contributions (HECS-HELP), tuition fees (FEE-HELP or VET FEE-HELP) and overseas study expenses (OS-HELP). While HELP loans are not specifically targeted to students based on gender, HELP loans are interest free and have income contingent repayment arrangements.

HECS-HELP loans are interest free and have income contingent repayment arrangements. This means that outstanding loan balances are indexed only to maintain their real value and people are required to make repayments only when their income reaches the minimum threshold for compulsory repayment, which is $51,309 for 2013-14. This ensures that people who choose to pay off their debts quickly are not disadvantaged compared to those who pay more slowly.

The repayment threshold relates solely to the person who undertakes the study, and does not take into account the incomes of their parents, spouse or other family members. Repayment amounts are calculated as a percentage of the person’s repayment income, beginning at 4 per cent and reaching a maximum of 8 per cent for the highest income earners. Most people repay their HELP debts over a number of years. This means that the Australian Government bears the deferral costs of the loans, which increase over the repayment period. If a HELP debt is never repaid because of low income the Government meets the cost.

In addition, the Government offers the HECS-HELP benefit, which is a financial incentive to encourage certain graduates to work in specific occupations or in specified locations by reducing their compulsory HELP repayments. The benefit applies to early childhood education, education, nursing or midwifery, mathematics, statistics and science graduates who meet the eligibility criteria.

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RMIT UNIVERSITY (THE ROYAL MELBOURNE INSTITUTE OF TECHNOLOGY)

Over the last two years there have been two initiatives to promote enrolments of girls in STEM programs, supported by RMIT’s College of Science, Engineering and Health (SEH).

SEH supported a research project titled Gender-based discipline choices in science and engineering in conjunction with the Engineering Information Foundation, NY, USA during 2012 - 2013. The project investigated what influences male and female undergraduates in their choice of engineering or science. It explored the idea that STEM program marketing might be more effective if it equally addressed the different interests of boys and girls. The influence of family and media varied significantly with gender. In particular, girls were more strongly influenced by their family, boys were more influenced by engineering in the media. The project developed hands-on marketing activities with broad appeal to engage boys (smash and crash,
science in the media, mastery appeal) and girls (group work, discussion on how STEM helps society, applications related to the human body).

SEH formed a Women in STEM Programs Working Group that reported to the Academic Development Committee, chaired by Assoc. Professor Margaret Jollands. Each STEM School nominated a member to the Group. A girls only Power of Engineering program was run for Yr 10 students, and a Girls in Engineering session was run at RMIT Open Day. The Group assessed STEM marketing initiatives worldwide. The most successful WIE programs are characterised by “adapting” – systemic transformation of the Institution. The least successful characterised by “adopting” - focus on helping female students to cope e.g. study support, peer mentoring, common rooms. The Group now advocates a more inclusive approach, with a focus on inclusive teaching in STEM programs. It has requested a more inclusive name.

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BELGIUM

GHENT UNIVERSITY

Role models

Several inquiries have vouched that lower inflow rates and higher dropout rates of ethnic minority students are – amongst other reasons - caused by the absence of role models. UGent takes an inspiring proactive role in seeking a solution to this major societal challenge by organising an academic intercultural Role Model Programme. This programme targets middle school students in local geographic communities. The role models participate in secondary school visits to inspire final year pupils with their own story of success. As such, these volunteers raise awareness about the importance of education.

Their goal is to share their cultural backgrounds and key experiences that allowed them to achieve their professional goals. The main objective is to encourage vulnerable young people to develop to their fullest potential. The pupils recognise themselves in the role models and envision the possibilities of determining and achieving their own dreams.

Further reading:

Bossaerts, B. (red.) (2007). Hoger onderwijs voor elk talent. KBS


Mentoring young researchers

In October 2009, Ghent University (Belgium) started a mentoring program for young female researchers. The mentors were male and female professors, the mentees female researchers with a Ph.D. They met several times to talk about topics of the mentee’s choice. The coordinators also organized workshops about networking, work/life balance and career planning. The first mentoring year ended in September 2010. The mentees were very positive about the impact of the program on their career. Some of them were just happy to have been able to talk about their uncertainties, others made real career changes. Male mentors said they had learned a lot about how women experience the difficulties of an academic career.

The main criticism was that some potential mentees and mentors had not wanted to participate because the program was restricted to female researchers. They stated that women do not need special help and that they would participate only if the program was open to male researchers as well.

A new mentoring year has started in March 2011. Although the program’s focus remains on gender, it is now open for both male and female researchers. Since 2012 the mentoring period lasts two years instead of one year, enabling the mentors and mentees to meet more often.
Gender Equality

Ghent University has undertaken actions aimed at gender equality since 1980. However, recently those actions were implemented in an integrated Gender Policy, including through Ghent University’s Gender Action Plan. Gender statistics at our university being made since 2004, have shown a strong gender discrepancy horizontally as well as vertically. The first imbalance turned up disciplinary, in which disciplines within the so-called hard sciences (engineering and architecture) indicated a predominance of male students (77%) in contrast with the so-called soft sciences disciplines (Psychology and Pedagogy) who are attesting an overweight of female students (83%). However the overall intake of female students at our university reaches 58%.

Although actions to equate gender segregation and further studies to map the various intake streams with intersectional statistics will be needed, the Ghent Universities Gender Plan decided to set the dominant focus of actions upon the vertical gender discrepancy. This second focus or vertically gender discrepancy within university Ghent has been localized trough staff policy. Even in the so-called soft study disciplines demonstrating an overweight at female students, the lecturers remained mainly male (4 out of 5). Therefore, the focus of the gender mainstreaming has meanly been on staff management. Instruments were created for gender neutral recruitment and selection procedures. Post-doctoral fellows could join into a mentoring program and enjoy individual career guidance. Furthermore, UGent implemented a new career policy for full professorship taking gender factors into consideration. Due to the severe underrepresentation of women in executive committees and boards with decisive authority, from the 1st October 2014 a new decree will come into force. This decree prescribes the constitution of all councils, guaranteeing at least 40% of members being women.

Besides this implementation the diversity and gender policy cell of the UGent proposed actions for a more equilibrated balance between work and private life for both women and men. As such, there is a pending inquiry to replace pregnant lecturers structurally and centrally.

Finally, in 2013 Ghent University (as the first University in Flanders) appointed a professor for gender studies and at the start of the academic year 2014-2015 an interuniversity master ‘gender and diversity studies’ will be launched. Ghent University is marked by an active gender policy, further developing and improving gender mainstreaming through evaluation and exchanging good practices with other partner universities.

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FINLAND

MINISTRY OF EDUCATION AND CULTURE, FINLAND

We want more... Women in Tech!

Why do women rarely choose a career path in technology? Why are girls not interested in sciences and mathematics in school? Maybe we are lacking inspirational female role models from the top of the technology world. Technology companies are in great need of the skills and knowledge of women.

A group of women and the Federation of Finnish Technology Industries launched an initiative for a technology forum to get more women into the field. Women In Tech 2013 forum was organised for the first time on October 15th 2013 to get together all men and women with a keen interest in the future of technology and in encouraging and supporting young women to begin and develop their careers in the technology sector.

Over 500 university students, university teachers, researchers and company members gathered to the forum to discuss how women could have a larger role in creating success stories in business and technology. Top speakers – women and men working in the corporate world and universities – shared their experiences as leading, visionary experts in the industry.

The Women in Tech 2013 forum was organised by the Federation of Finnish Technology Industries together with significant technology industry companies (Ensto Oy, KONE Oyj, NOKIA Oyj, Microsoft Oy, Wärtsilä Oyj,
Outotec Oyj, Tieto Oyj), universities, female student unions and other stakeholders. Next forum will be organised in 2015. Meanwhile, other Women in Tech activities are ongoing, for example upper secondary school visits by female students and young professionals. Learn more: http://www.womenintech.fi

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UNIVERSITY OF TAMPERE

The practices in promoting gender balance are not so visible or special. The university makes and uses statistics by gender both of the students and staff. This is to have facts for the planning and reporting of the gender equality. There is awareness of the so called glass roof in women’s academic career. To break it, guidance is given to all recruiting processes so that more men or women would not be preferred.

In Finland, all organisations, even the very small ones, must have a written action plan for the equality; not only for the gender equality, but also to prevent all kind of discrimination (gender, age, nationality, political).

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POLAND

MINISTRY OF SCIENCE AND HIGHER EDUCATION

Several projects have been initiated in Poland to foster women’s participation in scientific programmes and strengthen a scientific career. The Ministry of Science and Higher Education in cooperation with ELLE magazine has granted scholarships for outstanding female researchers in the contest ‘Girls of the Future, following the path of Maria Skłodowska -Curie”. The aim of the initiative was to identify and reward young, talented women – students in technical, medical and life sciences who conduct independent, innovative research and hold impressive scientific achievements in the fields that are commonly associated with the world of men.

The Conference of Rectors of Polish Technical Universities runs a program ‘Girls at technical universities”, elaborating lists of ‘women-friendly’ technical universities, and establishing dedicated contact points and information campaigns for potential candidates.

The fourteenth edition of another prestigious scholarship program for women scientists, conducting research in the domain of life sciences, will be launched on the 2nd April 2014. This year, the contest “For Women and Science” will be organized in cooperation between L’OREAL Poland, the Ministry of Science and Higher Education and The Polish Committee for UNESCO. It aims at promoting young, talented Polish women who carry out scientific research. Candidatures are evaluated by a jury composed of sixteen eminent scientists and authorities of the Polish scientific life. Each year the program emerges female talents who can inspire and encourage others to take a scientific career. The laureates conduct advanced research, among others, in the domain of medicine, biotechnology, biology. In the winners list, there are already 65 women from various academic centers in Poland.

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Gender Equality Plan

Two gender equality plans have been produced and a procedure for measuring gender inequalities has been implemented. Although equality is a fundamental right in democratic communities and organizations such as universities, the reality is that certain forms of discrimination persist and that mechanisms are needed to correct this discrimination and achieve true equality of opportunity between the sexes. In 2006 a team of experts was entrusted by the then rector, Dr Lluis Arola, to prepare the first report on gender inequalities at the URV.

Learn more: http://www.urv.cat/universitat/unitats_administratives/publicacions/cataleg/76/dones-i-dones-a-la-urv

The gender inequalities and differences identified in this report led to the creation of a URV University Court commission led by the current rector, Dr Francesc Xavier Grau, with the task of drawing up the first URV gender equality plan. When this first plan was approved in May 2007, the URV became one of the first universities in Spain to introduce a Gender Equality Plan.

In November 2011, the second URV Gender Equality Plan (2011-2015) was approved. Like the first URV Equality Plan (2007-2010), the aim of this second plan is to conduct activities aimed at eliminating discrimination from every body and competence of the University and incorporating gender-focused teaching and research in all university disciplines. The two plans are structured along six main axes: identifying and exposing sexism; raising awareness of equality of opportunity and creating a climate of opinion that is favourable to it, providing equal access to employment and promotion, being an institution that is committed to gender equality, mainstreaming a gender perspective in teaching and research, analysing the link between gender and science at the URV, and achieving balanced representation between men and women at the various levels of decision-making and in the various University bodies. Each of these axes led to the production of a series of measures: Plan I contained 49 measures and Plan II contained 56.

Gender equality observatory

One of the measures contemplated by the first URV Gender Equality Plan of 2007–2010 was the creation of the Gender Equality Observatory as a University unit dedicated to developing equality policies for the University community. Specifically, it has two objectives: to implement the measures outlined in the URV’s Gender Equality Plan, and to provide and disseminate information on gender inequalities to the University community and society at large.

The Observatory’s main functions are, to identify the inequalities existing between men and women in higher education, to collect and analyse relevant information on gender equality, to monitor the situation regarding equal opportunities at the URV, to promote training and research in gender studies, and to be a resource centre for consultation and research.

With the creation of the Gender Equality Observatory, the University also satisfied the requirements of two important Spanish laws: the modification of the Organic Law on Universities of March 2007, and Organic Law 3/2007 of 22 March on Effective Quality between Women and Men (the LOIEMH). Equality is a value that universities must incorporate into their structure and procedures as an objective of their own and transmit to the wider society in their surrounding area.

Girls’ Day

Girls’ Day has been organized by the Gender Equality Observatory in collaboration with the School of Engineering (ETSE) and the School of Chemical Engineering (ETSEQ) since 2010. At this day event, the University promotes studies in Engineering for female students in their penultimate year of secondary education. The aim of this type of event, which is already a tradition in Anglo-Saxon countries, is to encourage interest in engineering among girls, since the proportion of female students in these subjects is low: in
2012/13, the proportion of girls in the first year of ETSE was 10.75% and the proportion of those in the first year of ETSEQ was 26.57%.

The event is organized in three parts. In the first part, the many and diverse historical contributions of women to the world of Engineering are discussed in order to raise general awareness of the outstanding women in this field. A short presentation is then made of all the undergraduate Engineering courses available at the URV. In the second part, which is held in various on-campus laboratories, workshops take place to show the contents and influence of engineering in a more practical way. During the third and final part of the event, a round table discussion is held on women’s integration into the labour market by female engineers who are former students of ETSE or ETSEQ and who explain their work experiences.

**Gender Equality Week**

The URV’s Gender Equality Week is a 20-25 hour education programme intended for all URV students and is aimed at analysing still-existing gender inequality and highlighting the equality policies that are currently being implemented. Eliminating gender inequality is an objective of higher education institutions. If these institutions are to achieve this aim, the future professionals they are training must incorporate both the principle of equality and a gender perspective into their education. University students must therefore study several areas of knowledge more deeply from a perspective of equality between the sexes and become aware of the contributions women have made in several fields. Each edition of Gender Equality Week has been devoted to a different theme. This year’s edition focuses on the acquisition of abilities related to entrepreneurship and leadership through mentoring in communication skills and the creation of networks. Gender Equality Week is available to the entire University community as well as to the non-University population in order to raise awareness among the general public of gender-equality policies.

Also during Gender Equality Week, the Maria Antònia Ferrer i Bosch award is presented. This is awarded annually by the URV to recognise individuals, entities, institutions, or civil or academic groups whose defence of women’s rights and attempts to raise awareness of them have been outstanding.

**Visibilization of women in science**

In order to recover the contributions women have made to science and to disseminate them to a wider audience, the Gender Equality Observatory publishes documents that highlight how the presence of women in the various sciences has been undervalued. To raise the visibility of some of these outstanding women, every year a calendar dedicated to women in various scientific fields is produced.

- In 2009, the calendar was devoted to women in the field of Astronomy:

- In 2010 to women in the field of Chemistry:

- In 2011 to women in the field of Philosophy:

- In 2012 to women in the field of Justice:

- In 2013 to women in the field of Medicine:

- In 2014 it is devoted to women in the field of Architecture:

In order to make this women-in-science visibilization process available to a wider audience, a series of exhibitions is also conducted by the Gender Equality Observatory and other organizations. An example of an
exhibition organized by the Observatory is the one entitled Pioneres de la ciència (Female pioneers of science): http://www.urv.cat/media/upload/arxius/igualtat/expo_cartellsblancs.pdf.

Research and Teaching on women and gender equality

The URV believes it is fundamental to promote teaching and research on the existence of gender inequality. For this reason, we have begun the following initiatives in this direction:

1. participation in as well as leadership of several national and European research projects in this area, including a European project on equality in European and Latin American higher education institutions (http://www.urv.cat/igualtat/equality.html) and a teaching module on European integration and gender (http://www.urv.cat/igualtat/jeanmonnet.html);
2. incorporation of gender as a teaching topic in numerous degrees and qualifications (http://www.urv.cat/igualtat/docencia.html);
3. creation of an award for the promotion of research in this area (http://www.urv.cat/igualtat/premii.html);
4. participation in national and international networks on this topic, including the Women and Science Commission of the Inter-University Council of Catalonia and RUIGEU (the Network of Gender Equality Units for University Excellence).

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SWEDEN

KAROLINSKA INSTITUTET

The department of education has formulated goals to increase the number of female professors at Swedish Universities. For Karolinska Institutet, 47% of professors appointed between 2012 and 2015 should be female. A strategy has been implemented including both short and long-term activities. Long-term activities include providing funds for excellent female researchers to increase the time for research, support networks of female researchers and mentoring programs. The recruitment process will also examine with regard to gender equality. Short-term solutions include monetary support for departments that appoint female full professors or guest professors.

Submitted by: Professor Göran Dahllöf, Council of Equal Treatment, Chairman, Karolinska Institutet, Goran.dahllof@ki.se

ÖREBRO UNIVERSITY, SWEDEN

Örebro University is currently working actively to ensure that we supply the organization with a high level of competence in its staff in the future. A project is developing in Human Resources to maximize the level of competence in the organization, by attracting and keeping both internal and external persons that can maintain and increase the organizations competence factor. The gender aspect is vital here, as female PhD-students, for example, have a tendency to leave the organisation after they receive their diploma. An increase of gender-balance among the higher academic ranks is one way of securing a higher level of competence.

The University has recently established an action plan for increasing the number of women among its professors. Included in the action plan are several practical activities that intend to facilitate this goal. Among the activities proposed are for example mentor programmes for young academic professional women that provide them with female role-models, and possible funding for women associate professors to ensure that they can merit themselves enough to apply for professorship. The action plan is based on the Swedish national IDAS-system that has been developed to aid women advance in academic careers.

Örebro University has, as is true of a majority of Swedish universities and colleges, a gender-imbalance in certain programmes and courses. As we are aware of this, we continuously strive to promote
underrepresented genders in different contexts, such as recruitment bazaars and open-houses aimed at high school students who are applying to university.

Our Communications Department aims to represent a balanced gender–level in all major external and internal productions such as yearbooks, course catalogues, information pamphlets and other PR material. The University’s Equality Board (expert organ to the Vice-Chancellor) is frequently involved in this process.

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UNITED KINGDOM

HIGHER EDUCATION FUNDING COUNCIL FOR ENGLAND

HEFCE’s Leadership, Governance and Management (LGM) Fund

HEFCE invested in improving leadership, governance and management in the HE sector through the Leadership, Governance and Management (LGM) Fund. Now closed, the LGM Fund provided funding for a number of equality specific projects. For example one project benchmarked the participation of women in STEMM in HE and another project focused on women in clinical academia. Full details of all the LGM Fund projects are available on the website.

Strategic Development Fund

Now closed, the SDF supported projects such as the National HE STEM Programme (2009-2012) that incorporated work addressing both widening participation and gender issues in STEM.

HEFCE’s Postgraduate Support Scheme

The purpose of the scheme is to support progression to postgraduate taught (PGT) programmes of study for those students who are currently under-represented in PGT provision (and in areas which match the Government’s growth ambitions, e.g. STEM). Many of the funded projects are focusing in on particular groups; for example, Brunel University’s project provides targeted scholarships to women in Engineering programmes.

Other relevant activities

National Teaching Fellowship Scheme promotes excellent learning and teaching. See for example Formations of gender in HE which looks at gendered experiences of HE and provides a Teaching inclusively resource pack.

Produced as part of the What Works programme, Peer Mentoring Works details the value of peer mentoring in promoting student success in higher education.

The Mike Baker Doctoral Programme funds a variety of initiatives, some of which concentrate on widening participation and equity/gender balance, retention and success. See for example the case study connected to the Edinburgh funding here.

The Workshop and Seminar Series again funds a variety of workshops, many of these, however, have a gender/equity balance. See, for example our Widening Participation in HE Computing. The corollary outputs of these events are often uploaded onto the event site post-event.

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