

# Education and Training of Women (B)

The Beijing Declaration and Platform for Action for Equality, Development and Peace (BPfA) 1995<sup>1</sup> establishes that education is a human right and an essential tool for achieving the goals of equality, development and peace. Equality of access to, and attainment of, educational qualifications is necessary if more women are to become agents of change. Discrimination in girls' access to education persists in many areas, owing to customary attitudes, early marriages and pregnancies, inadequate and gender-biased teaching and educational materials, sexual harassment and lack of adequate physically and otherwise accessible schooling facilities.

The creation of an educational and social environment, in which women and men, girls and boys, are treated equally and encouraged to achieve their full potential, respecting their freedom of thought, conscience, religion and belief, and where educational resources promote non-stereotyped images of women and men, would be effective in the elimination of the causes of discrimination against women and inequalities between women and men.

In order to address these problems, the following strategic objectives were set and agreed to be implemented by the national governments.

## The strategic objectives

- B.1 Ensure equal access to education
- B.2 Eradicate illiteracy among women
- B.3 Improve women's access to vocational training, science and technology, and continuing education
- B.4 Develop non-discriminatory education and training

B.5 Allocate sufficient resources for and monitor the implementation of educational reforms

B.6 Promote lifelong education and training for girls and women

## Indicators

According to the report<sup>2</sup> prepared by the German Presidency in 2007, the education and training of women is a human right with far-reaching implications for the employment possibilities and economic independence of women. We should add here new targets if they are presented in the Europe 2020 strategy.

In the EU, women have drawn level with men in education and training. The gender ratio when entering the tertiary educational system has reached equilibrium. On average, women achieve a higher level of education/training than men.

Horizontal and vertical segregation is prevalent in education and training. The level of educational attainment and employment status are positively correlated. However, there remains an evident difference between women and men with regard to employment at equivalent educational attainment. The report by the German Presidency identified five key issues with regard to gender equality in the field of education and training, in line with the BPfA and EU strategies:

- lifelong learning;
- migrants in the educational system;
- tertiary education: science and technology;
- unequal opportunities in employment: the return of education;
- gender equality at scholar and decision-making level.



Due to the lack of available and comparable EU data on migrants in the educational system and on the access to lifelong learning of women and men as well as the characteristics of women's and men's participation in lifelong learning, the report focused on three other key issues and proposed three indicators on education and training of women on that area.

During the meeting in May 2007, the Employment, Social Policy, Health and Consumer Affairs (EPSCO) Council met<sup>3</sup> and adopted the Council conclusions<sup>4</sup> whereby the following indicators were proposed. The indicators are linked to strategic objectives B1, B3 and B4.

## Indicator B1

**Name:** Proportion of female graduates and male graduates of all graduates in mathematics, the sciences and technical disciplines (tertiary education)

**Concept:** The indicator describes the proportion of female and male tertiary graduates in mathematics, sciences (science and computing) and technical disciplines (engineering, manufacturing and construction), from both public and private institutions, completing graduate/postgraduate (ISCED 5) as well as advanced research studies (ISCED 6) compared to the total number of tertiary graduates in the respective fields of study.

The levels and fields of education referred to in the indicator follow the International Standard Classification of Education (ISCED)<sup>5</sup> and the Eurostat Manual of fields of education and training. ISCED 5 is defined as the first stage of tertiary education and comprises the two categories ISCED 5a and ISCED 5b. Most ISCED 5a programmes are largely theoretically based and intended to provide sufficient qualifications for gaining entry into advanced research programmes or professions with high skills requirements. ISCED 5b

programmes are practically oriented and the programmes' content is typically designed to prepare students to enter a specific occupation. The qualifications acquired in ISCED 5b programmes do not give direct access to advanced research programmes.

The classification ISCED 6 refers to programmes in the second stage of tertiary education that lead to the award of an advanced research qualification, often at doctorate or PhD level or beyond. The programmes are devoted to advanced study, original research and prepare graduates for an academic career in institutions of higher education.

The indicator distinguishes between female and male graduates with ISCED 5 and ISCED 6 qualifications, and thus illustrates the tendency of females engaging in mathematics, sciences and technical disciplines with regard to the level of qualifications acquired as well as vocational destinations. The distinction adds to the depth of the analysis, as the educational decisions and achievements of graduates can largely determine the career and societal roles available to them. Furthermore, the disciplines of interest have been qualified in more detail so as to reveal possible differences. The presentation of the data as a proportion of the total number of graduates in the respective fields facilitates the analysis and, therefore, the identification of both horizontal and vertical segregation.

**Data source:** Calculation of the indicator is based on education and training statistics coordinated by Eurostat<sup>6</sup>.

**Published:** Data are available in the Eurostat online database (educ\_grad5: 'Graduates in ISCED 3–6 by field of education and sex').

**Notes:** In principle, it covers all EU Member States. The oldest data are available from 1998 and the data are updated annually. Some changes in the data collection could influence comparisons over time and some breaks in the

availability of data for specific years or specific fields occur in certain countries.

Education systems differ between countries and although the ISCED classification makes the comparison of levels of educations between countries possible, the differences may, nevertheless, affect certain figures. Furthermore, the academic degree structures differ between countries; the indicators on tertiary graduates by fields of study are, therefore, affected by differences in countries' academic degree structures.

The indicator measures science and technology taking in the fields 'Science, mathematics and computing' and 'Engineering, manufacturing and construction'.

## Indicator B2

**Name:** Employment rate of women and men (aged between 25 and 39 years; and aged between 40 and 64) by highest level of education attained

**Concept:** Measuring gender-disaggregated employment rates by educational attainment offers an insight into the level of knowledge and skills available in the labour market and helps to assess the extent to which the labour market offers appropriate workplaces to women and men. The indicator depicts the employment rate of females and males aged between 25 and 39 years as well as aged between 40 and 64 years by the highest level of education attained.

The ISCED classification is used to define the levels of educational attainment, which are divided into three categories:

- pre-primary, primary and lower secondary education (ISCED 0–2);
- upper secondary and post-secondary non-tertiary education (ISCED 3–4);
- tertiary education (ISCED 5–6).

The categories depict the differences between knowledge, skills and qualifications obtained at these different educational levels. In addition, they indicate divergent job opportunities and destinations in the labour market associated with each category.

**Data source:** The calculation of the indicator is based on the Labour Force Survey (EU-LFS)<sup>8</sup>.

**Published:** Data are available in the Eurostat online database (lfsa\_ergaed: 'Employment rates by sex, age groups and highest level of education attained (%)'<sup>9</sup>).

**Notes:** The data cover all EU Member States and the oldest data are available from 1983 (but not for all Member States). The period can be broken into three levels of coverage: 1983–97: sparse; 1998–2006: majority of countries are covered; 2006–09: very few exceptions.

The data were updated annually until 2000: since then, data have been updated quarterly. The comparability of the data over time and across countries is assessed as high, although improvements over time have meant some breaks in some time series, and three countries (Germany, Spain and Sweden) made major changes to improve their survey in 2005.

The age groups proposed in development of this indicator were 25–39 and 40–64. One of them, 25–39, is not available in the published tables.

## Indicator B3a

**Name:** Proportion of female/male ISCED 5a-graduates of all ISCED 5a-graduates and proportion of female/male PhD graduates of all PhD graduates by broad field of study and total

**Concept:** The indicator is divided into two parts. The indicator investigates the proportion of female and male graduates at ISCED 5a level from academic institutions analysed by field



of study, which includes tertiary educational programmes with an academic orientation. The ISCED 5a graduates are qualified to enter a profession with high skills requirements or an advanced research programme.

The indicator also denotes the proportion of female and male graduates at PhD/doctorate or equivalent level (ISCED 6) of all graduates at PhD/doctorate or equivalent level from academic institutions analysed by field of study. Investigating broad fields of study at ISCED 5a level and PhD/doctorate or equivalent level sheds light on the gender balance among highly qualified graduates as they reach the point of both admission to the advanced research programmes and entry into employment. Similarly, it indicates female and male achievement rates across the different fields of study at the academic and advanced research level.

The following fields of study have been used for analysing the situation in the report:

- all fields of study
- teacher training and education science;
- humanities and arts;
- social sciences, business and law;
- science, mathematics and computing;
- engineering, manufacturing and construction;
- agriculture and veterinary;
- health and Welfare.

**Data source:** Calculation of the indicator is based on education and training statistics coordinated by Eurostat<sup>10</sup>.

**Published:** Data are available in the Eurostat online database (educ\_grad5: 'Graduates in ISCED 3 to 6 by field of education and sex'<sup>11</sup>).

**Notes:** In principle, it covers all EU Member States and data are usually available from 1998 although there are some breaks in the availability of data for specific years or specific fields in certain countries. The data are updated annually. Some changes in the data collection

could influence comparisons over time and some breaks in the availability of data for specific years or specific fields are in certain countries.

Education systems differ between countries and although the ISCED classification makes the comparison of levels of educations between countries possible, the differences may, nevertheless, affect certain figures. Furthermore, the degree structures differ between countries and the indicators on tertiary graduates by fields of study are, therefore, affected by differences in countries' degree structures.

## Indicator B3b

**Name:** Proportion of female and male academic staff differentiated by level of seniority and in total

**Concept:** The relative distribution of women and men at the different levels of seniority in academia is crucial to the promotion of gender parity. Therefore, it is vital that the vertical dimension of employment in academia is realigned from a gender-biased research arena towards a creative and sustainable R&D environment benefiting from equal contributions by women and men.

The indicator on the proportion of female and male academic staff of total academic staff by grade and in total allows gender ratios to be assessed at different levels of seniority. Academic staff grades serve as points of reference. Proposed by the European Commission, this classification was developed by the Statistical Correspondents (subgroup of the Helsinki Group on Women and Science) in order to account for the vertical dimension of academia, which is not encompassed in the ISCED classification. The academic staff grades portray the link between position in academic

institutions, experience and level of educational attainment:

Grade A: the single highest grade/post at which research is normally conducted;

Grade B: researchers working in positions not as senior as top position (A) but more senior than newly qualified PhD holders;

Grade C: the first grade/post into which a newly qualified PhD (ISCED6) graduate would normally be recruited.

**Data source:** The calculation of the indicator is based on WiS database (Women in Science database)<sup>12</sup>. The WiS database is updated triennially with the publication *She Figures*: it was updated to *She Figures 2006* and *She Figures 2009* and will be updated to '*She Figures 2012*'. In between publications, there is no update. The updated database is not publically available.

**Published:** The latest data are published in the European Commission publication *She Figures 2009 — Statistics and Indicators on Gender Equality in Science* (Table 3.1 'Proportion of female academic staff by grade and total, 2007')<sup>13</sup>.

**Notes:** The data cover all EU Member States and the oldest data are available from 2003 (but not for all Member States). The data have been collected by the Helsinki Group on Women in Science since 1999. The data are stored in the database for Women in Science and maintained by the Directorate-General for Research and it has been published in the report '*She Figures*' triennially since 2003.

Data are not necessarily comparable between countries due to differences in coverage and definitions.

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## More information

### Policy documents

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## Reports

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## Notes

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7. Table 'educ\_grad5: Graduates in ISCED 3 to 6 by field of education and sex' is available online ([http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=educ\\_grad5&lang=en](http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=educ_grad5&lang=en)).
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