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Organización
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para la Educación,
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منظمة الأمم المتحدة
للتربية والعلم والثقافة

联合国教育、
科学及文化组织

Address by Irina Bokova,

Director-General of UNESCO

on the occasion of the International Women's Day

Workshop on "Women in Engineering: Importance and Challenges"

UNESCO, 8 March 2012

Mr Adel Al-Kharafi, President of the *World Federation of Engineering Organisations*,

Ms Bashayer Al-Awwad, Chair of *Women in Engineering* at the *World Federation of Engineering Organizations*,

Ms Anousheh Ansari, Chair of *Prodea Systems*,

Excellencies,

Ladies and Gentlemen,

It is a pleasure and an honour to open this discussion on women in engineering, on the occasion of *International Women's Day*.

Science offers answers to key questions we must address over the next century – questions about equitable and inclusive growth, about sustainable development, about the resilience of our societies.

UNESCO's role is to help States answer these questions, together.

As you know, the "S" in our acronym was a latecomer to our mandate – introduced during the Organization's constituent conference in November 1945.

Since then, science has taken a place at the heart of UNESCO's work to build new forms of international cooperation for peace and development.

Science, technology and innovation can contribute to reaching all of the Millennium Development Goals -- from poverty eradication to environmental sustainability.

Engineering is an important part of this.

The *UNESCO Engineering Initiative* has grown from strength to strength, fostering new partnerships with such organisations as the *Institute of Electrical and Electronics Engineering*, while expanding its outreach through our long-standing partnership with the *World Federation of Engineering Organizations*.

This Initiative has a strong focus on engineering education -- with emphasis on curricula development and capacity building at tertiary level, on young people and women engineers, and on engineering for sustainable development.

The role of engineering for sustainable development must become more visible and better understood.

This is important now, as we prepare for the *United Nations Conference on Sustainable Development* in Rio.

This is important for the century ahead, as we lay the foundations for green societies and green economies.

We need to forge stronger links between science and development. We must place science at the heart of the global development agenda.

Needs run very deep - especially in the developing world.

An estimated 2.5 million new engineers and technicians are required in sub-Saharan Africa for the region to achieve the Millennium Development Goals of improved access to clean water and sanitation.

In Namibia, Zimbabwe and Tanzania, there is 1 qualified engineer for a population of 6000 people, compared to 1 engineer per 200 people in China.

We need to attract more young minds to engineering, to motivate them to tackle the challenges and seize the opportunities arising in the developing world.

We must nurture the creativity and innovation of every member of society.

This calls for attracting far more girls and women to engineering.

In the United States, the percentage of women graduates in engineering stands below 20 percent.

Some engineering disciplines – for instance, biological, environmental, chemical, industrial and materials engineering – are growing significantly, now awarding about 30 percent of their degrees to women.

Studies highlight a mixed picture in Middle East, ranging from very high levels of women's representation in engineering/technical schools in some countries to lower levels in others.

There is progress, but it is meagre.

In Australia, for instance, women represent about 15 percent of student engineers -- but they are not retained in the sector and make up less than 7 percent of the engineering workforce.

Engineering fits into a wider picture that is equally distressing.

Based on a sample of 89 countries, the UNESCO Institute for Statistics estimated in 2010 that only 29 percent of the world's researchers are women.

We are facing a vicious circle that starts early and gathers pace.

According to UNESCO's *2010 Global Education Digest*, consistent gender disparities prevail at most stages of education in science and technology and in most regions of the world.

We have just launched a *World Atlas of Gender Equality in Education* that points in the same direction.

Men constitute the majority of graduates in engineering, manufacturing and construction in all but one of the 84 countries for which data is available.

The problem is especially acute when women seek to cross the gap between education and professional life.

The barriers are considerable for girls and women to move up the educational ladder to research careers.

Less a 'ladder,' the more appropriate image may be that of a 'leaky pipe' – which, in the end, leaves very few women researchers and scientists in top managerial positions throughout the world.

Engineering carries particular challenges – ranging from poor work-life balance and a lack of family-friendly policies in many organizations to persistent stereotypes about gendered roles.

Ladies and Gentlemen,

We know there are no immovable barriers to gender equality.

Experience shows the importance of pioneers in making things happen.

We must do more to inspire girls and women to lead.

For over ten years, UNESCO has partnered with L'Oréal to promote women in scientific research and to support new careers for young women researchers.

Since 1998, we have recognized over 700 women scientists from more than 70 countries, encouraging them to pursue their scientific vocations.

Every year, we award 15 *UNESCO-L'Oréal International Fellowships* to promising young women researchers in the Life Sciences.

We also award *UNESCO-L'Oréal Women in Science Award* to five exceptional women researchers, one per continent, who have been identified as role models for the generations to come.

Since 1998, 67 such awards have been made to laureates from 30 countries.

The winners of the 2008 *UNESCO-L'Oreal Women in Science Award* went on to receive the Nobel Prize one year later -- the Israeli scientist Ada Yonath for chemistry and the American scientist Elizabeth Blackburn for medicine.

In 2011, we awarded the prize to five laureates -- from Kuwait, China, the United States, Sweden and Mexico.

On 29 March, we will hold the 14th ceremony of the Awards at UNESCO Headquarters.

The importance of role models should not be underestimated.

We are honoured to welcome a special role model today as keynote speaker – M. Anousheh Ansari, engineer, and award-winning co-founder and chair of *Prodea Systems*.

At a young age, Ms. Ansari, you are already inspiring girls and women across the world. We all look forward to hearing your views on the role of women in engineering.

To support women in science teaching and research, UNESCO has also established 8 University Chairs in Gender, Science and Technology – in Argentina, Egypt, Morocco, Sudan, Togo, and Pakistan.

We also work on the ground – to integrate gender sensitivity as early as possible into the educational cycle.

In partnership with GEMS Education, we have launched a project in Kenya and Lesotho, to improve girls' and women's access and advancement in the learning and teaching of sciences, mathematics and technology.

With the Barefoot College, we have launched a programme to train illiterate rural women – starting in Africa -- to become local entrepreneurs in solar technology.

These projects are part of the *Global Partnership for Girls' and Women's Education* I launched last May, in the presence of United Nations Secretary General Ban Ki-moon and United States Secretary of State, Hillary Rodham Clinton.

The Global Partnership targets the weak links of girls' secondary education — including science education -- and women's literacy.

Working with major private sector companies, our goal is to make a concrete impact on the ground.

Ladies and Gentlemen,

These are partnerships of expertise and innovation.

They are vital for achieving progress.

In this respect, I wish to thank the *World Federation of Engineering Organizations* for the longstanding cooperation we have developed -- on the *2010 Engineering Report*, for instance, and today's programme.

We have fascinating sessions today, exploring success stories, stereotypes and concrete projects.

I wish you productive exchanges and look forward to hearing your conclusions.

These will be important for the goal we share – to place science at the heart of our pursuit of a more equitable, more prosperous and more sustainable 21st century.

Engineering is vital to this pursuit – and so must women play a leading role as researchers, innovators and pioneers.

Thank you.