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Women's rights, gender and ICTs



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SPAIN

Shaping the internet: Women's voices in ICT through training¹



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Introduction

Over the last 20 years the world of technology has advanced by leaps and bounds and has completely transformed our way of life. Technologies have made their way into all aspects of our daily lives, from work to leisure and personal lives, becoming an indispensable tool, versatile and powerful. As in other areas, gender differences are also clearly visible in the technological world, showing quite clearly and overwhelmingly that women's presence in this field is very poor compared to that of men. Without balanced participation in information and communications technology (ICT) training, women's voices cannot shape the ICT aspects of our current and future world. This report focuses on the root cause of the gender imbalance in ICT training and the subsequent lack of ICT professionals who foreground women's voices in this domain. The report is based on several interviews with female ICT professionals, many involved in different areas of ICT training at the Universitat Politècnica de Catalunya (UPC) in Barcelona, Spain, one of the top Spanish universities in ICT training.

Background

In various sectors – government, academia, etc. – efforts have been made and various initiatives have been launched to bring the world of technology closer to women. Although it can be said that there has been some progress in certain aspects, looking back and viewing the current situation in our country it cannot be said that progress has been sufficient. The current situation is far from perfect. Sadly, the situation is not very different from 20 years ago, and unfortunately many of the initiatives and projects that are carried out seem stuck

in the past and are not evolving, which is really disheartening considering the fast pace of change in the technological world. Technology is moving at lightning speed while many initiatives that focus on women are still in their infancy. Year after year, obsolete plans (e.g. digital literacy) that have proven not to be effective enough are repeated.

UPC has spent many years working to increase the number of women embarking on studies in technology. Tracking their efforts and results may shed some light on the evolution of the relationship between gender and technology in our country, at least in academia.

Because the number of women studying technological degrees at UPC is much lower than the number of men, the “Women's Programme” at UPC was launched in 1996, among other things, to work on and improve these numbers and reduce the disparity. Since its inception the Women's Programme has launched several initiatives to bring technology closer to female students and arouse their interest in pursuing a career in technology. Without very clear criteria at the outset on how to deal with this issue, the initiatives implemented were based on trial and error. At first the programmes were rather protective and segregated in terms of gender, highlighting the differences between men and women and failing to make women feel less like strange specimens within the system. Facing the failure of these early initiatives, in recent years programmes aimed at integration of women on equal terms have been adopted. Now the existing programmes seek to provide tools for women and improve the university education system so that it promotes access and the progress of female students. They include more personalised tutoring programmes geared to the needs of women, activities that take into account the interests and abilities of women, and improvements in the evaluation system – which often favours men because it usually emphasises the kind of evaluation in which men are said to excel, such as multiple choice quizzes, instead of the type of testing where women are said to excel, such as narrative and argument.

It should be noted that these programmes produce better results, but they are not a miracle remedy. There is much uncertainty among the

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experts consulted and diverging opinions about the reasons why women decide not to undertake technological studies. All experts agree on the need for more research and to delve deeper into the issue to find the important influencing factors and develop more successful solutions and approaches. Some of the factors being debated have to do with the natural tendency of people to become interested in certain issues, or with the idea that women are often more practical and “realistic” in nature, or have greater empathy or an inclination for social interests and relationships with people.

While these inclinations clearly depend not on gender, but on the characteristics and nature of each individual, in general it is observed that there are issues that are of more interest to women while others have little or no appeal. Unfortunately technological topics apparently do not appeal to many women. Some women technologists believe that this is reinforced by society. The lack of real examples of women working and being successful in the technological field does not improve the situation.

Moreover, the eminently more practical and pragmatic nature of women makes them inclined to choose studies that they feel confident about completing – in this respect they tend to avoid unnecessary risks when choosing. Women tend to choose studies that have a clearly defined future employment path, where employment opportunities are broader, more established or more abundant. This leads them towards established and classical studies, where the path of learning and working is better defined and where years and years of experience and examples create role models that they can emulate. In the case of computer science studies, the fact that this science is evolving so fast means that it requires a lot of effort to keep up to date and sustain a leading position. The constant learning process required means that women sometimes feel that it will not be easy to reconcile this with their personal and other interests. This is often combined with the idea that women generally have greater empathy and better skills in fields such as the social sciences.

These choices and perceptions reinforce gender imbalances when it comes to technology. Probably unconsciously, men shape and develop technologies according to their vision of the world, according to their character, their interests and their strengths, regardless of other views, other interests or other ways of thinking. This creates a subtle gender discrimination. Men are not necessarily to blame, because imbalances in the opposite direction occur in other sectors (think of the health

sector and children’s education). But what makes dealing with the imbalance in technology more relevant is the fact that technologies are increasingly an intrinsic part of our lives. Such an influential part of the world around us cannot be left in the hands of only a portion of the population.

While it is not an easy task to address gender imbalances, it is made more difficult because for various reasons the reputation of computer science is not very good. Among technological studies, computer sciences are rather discredited and have had a bad reputation for having a too “extreme and unusual” air about them. Computer scientists are often regarded as being antisocial, nerdy, or too competitive. All these features usually do not attract the female gender. Moreover, despite being a science that spans many fields and sectors of our society and our lives, there is a common belief that the field of computer sciences is something that everyone knows, or thinks he or she knows. This fact counts against it when assessing it as a possible area for study, because future opportunities and potential career paths are not clearly visible.

Given this scenario, it is not an easy task to raise interest among women for computer studies. There are, however, a few women who are studying or have studied computer sciences. And as a distinguishing and revealing feature, the academic results from women in these studies show that, although few, they are among the students who excel in the sciences and computer studies. They are good students, hard workers, consistent and persistent and often get very good results.

UPC statistics² show that in the 2010-2011 academic year, the number of women enrolled in undergraduate computer courses was 40 versus 369 men (9.78% women versus 90.2% men) and in 2011-2012 the disparity was even worse, with only 5.8% of computer science students being women. However, the percentage of women who finish their studies often exceeds that of men. The statistics are much better with regards to second-cycle studies (equivalent to Master’s degrees), where the number of women increased to 17% (2010-2011). At UPC, computer science studies account for the most extreme imbalance between men and women, while for all technological studies the gender imbalance exists, but is not so acute. In other studies women represent 12% to 15% of students enrolled in undergraduate courses such as telecommunications engineering or electronic systems engineering,

² Statistical data provided by UPC for academic years 2010-2011 and 2011-2012.

and up to 23% to 25% in industrial technology engineering or industrial construction engineering. This trend also shows in the data provided by the UPC Women's Programme. In a period of six years the number of women studying technology has experienced an occasional surge, but generally it has remained stable or fallen. In the case of computer studies there is a downward trend.³

Action steps

It is clear that the current situation is not that good, after so many years of programmes, efforts and initiatives to increase the number of women studying technology. This is not just a lack of success, but a conclusive failure, and should serve as a catalyst for research into the reasons why women are not interested in technology, and to look for possible approaches and solutions more effective than those carried out so far. Some women ICT professionals believe that this problem has to be faced from its earliest origins and that there is a

need to commit to improving science education, which has now been pushed down the curricula of primary and secondary education. Specifically, computing and technology are not only relegated to a secondary role but are usually in the hands of non-professionals in the field, with all that that entails. It is important to show girls in high school the possible career paths for professionals in this field, and what it means for social improvement. Teachers in primary and secondary education should have the tools and the right environment to guide their students according to the different gender needs. It is also important to strengthen the role of society in women's access to technology. Female roles should be given more visibility, and there should be a push towards equality and balance in terms of the presence of women technologists in our society. We need visible examples that help women take on the challenge of participating in a field that is increasingly important in all aspects of our lives. ■

³ Data provided by the Women's Programme at UPC, corresponding to the percentage of women students at UPC centres. The data on computer studies corresponds to the Barcelona School of Informatics for academic courses from 1996-1997 to 2001-2002.