



Trends of Career Development for Women in Physics and STEM in Belarus

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The recent progress in involving females in Physics/STEM (science, technology, engineering, and mathematics) education all over the world gives a hope that fruitful contribution to these areas of distinguished females will have further been enhanced. Here, we report changes in the curricula of tertiary education and trends of career development for women in Physics/STEM in Belarus. In particular, we studied the ways that two reputable universities in Belarus have passed for the last decades to use women's potential in areas strongly dependent on knowledge and skills in Physics/STEM including microelectronics/nanotechnology and physics education to name a few.

In the present research we examined the statistics of enrolled and graduated male and female students in the educational programs at the BSUIR, which are tightly connected with classes on Basic Physics and Solid State Physics. The statistics of Physics Faculty, branch Physics, collected at the Yanka Kupala State University of Grodno was also analyzed by gender. The analysis was made for the period from 2003 to 2022, when gradual conversion of the 5-year Programs to the 4+2-year (Bachelor's + Master's) Programs took place. Also, decreasing by half of academic hours devoted to practical work in Physics happened those years. In addition, we found out how many males and females graduated with honor and then proceeded their career in science and technology. We saw that, in general, the content of female students is approx. ten times less than that of male ones. At the same time, traditional Programs (until 2005) has encouraged more females to pursue engineering education. However, the process of decreasing the hours of practical classes has led to less students graduated with honored diploma. What is more important, girls were more successful in passing exams with high grades than male students. Comparing the number of the enrolled and graduated students demonstrated that they are nearly the same, which shows rather strong intentions of both males and females to get the higher education in the engineering spheres. Approx. 10 % of youth has been enrolled in Master's Programs upon completion the Bachelor's Programs and females have constituted 30% of them. However, just 10% of girls defended Master's theses has proceeded their career in science and technology or engineering sphere (Fig. 1). Survey of 3rd year students of the above-mentioned programs shows that nearly 80–90% of females intended to develop their research or engineering career while 40–50% of the boys had doubts. We suggest this is a proof of the initial determination of girls to be engaged in technical activity, but then they face some hurdles and often quit their career. In summary, we consider the ways and approaches needed to overcome revealed challenges and negative trends of career development for women in Physics/STEM in Belarus.

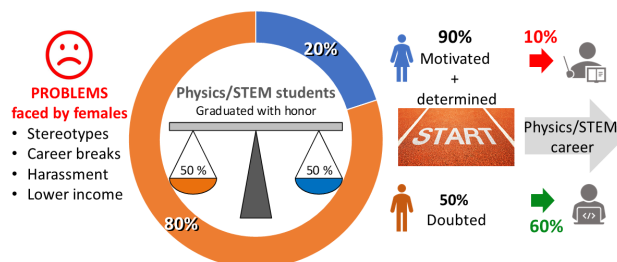


Figure 1. Career development layout for women and men in Physics/STEM in Belarus