

Women considering STEM careers face discrimination at every step

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Women face underrepresentation in STEM due to social stereotypes and discrimination from groups all around them, including family, university faculty, peers, and potential employers, finds new research from Nazarbayev University Graduate School of Education (NU GSE (<https://gse.nu.edu.kz/en/>)).

Aliya Kuzhabekova, Associate Professor from NU GSE, and colleagues interviewed female students on their experiences and retention in STEM education. Interviews were analysed for themes and sub-themes. Three key areas were most prominent in their experiences:

Individual factors

Many participants reported strong academic performance in STEM subjects, however, almost half were not supported by their parents in choosing a STEM degree. Also, despite high academic performance, some had low confidence in their abilities due to believing they had a lack of hands-on experience compared to men. They claimed this was due to society expecting girls to be more involved in household chores, leaving less time for practical experience.

Institutional Factors

A lack of female academics was identified as a factor behind lower female engagement in STEM. Most participants stated that it was essential for them to have female faculty members as role models, experiencing increase in inspiration when they saw that women were successful in STEM fields. Almost half of participants also reported differing treatment from professors, with males held to a higher standard as female students were not expected to work in the field in the future.

Socio-cultural Context Factors

Social stereotypes are especially pronounced during internships where women encounter their first professional experiences. Participants expressed that mentors would be surprised to see a woman performing as well as their male counterparts, treat them as less smart or useful, or express dissatisfaction at having at having female interns in their organisation.

Professor Kuzhabekova says, "Women's participation in STEM is critically important for any country's economic competitiveness and social equity agenda. Social stereotypes about women in society seem to play the most influential role in underrepresentation. These cultural stereotypes and expectations are transferred through the family, university faculty, peers, and potential employers and manifest in girls' beliefs about themselves and their sense of belonging in STEM."

Discrimination and gendered attitudes still exist in education and work and should be addressed when implementing policies to improve gender equality in STEM. Universities need to be proactive in combatting stereotypes and faculty members should be encouraged to maintain high expectations for all students, regardless of gender, and promote positive learning environments for all.

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