Women in science

Aufgaben

Der vorliegende Vorschlag enthält in Aufgabe 3 alternative Arbeitsanweisungen.

1 Outline the reasons why there are few women studying physics and pursuing careers in science, especially in the field of physics. (Material 1)

(30 BE)

2 Analyze how the author tries to convince her readers. Refer to communicative strategies and language. (Material 1)

(40 BE)

3 Choose one of the following tasks:

3.1 Referring to your course studies and the text at hand (Material 1), assess to what extent the cartoon (Material 2) reflects gender roles in the sciences.

or

3.2 As a student in the field of STEM (Science, Technology, Engineering, and Mathematics) you participate in an international project to promote more women in science. Write an article for the project website developing ideas for their promotion.

(30 BE)

Material 1

Valerie Jamieson: Women in physics: Why there's a problem and how we can solve it (2018)

[…] When we were 16 years old, my friend Karen and I were interviewed for an educational video. With our hair thick with styling mousse, pale blue eyeliner and misplaced teen swagger, we explained why we had chosen to study physics. We were the only two girls in our school that year who had. Our video was going to inspire other girls to do the same. We were going to change the world.

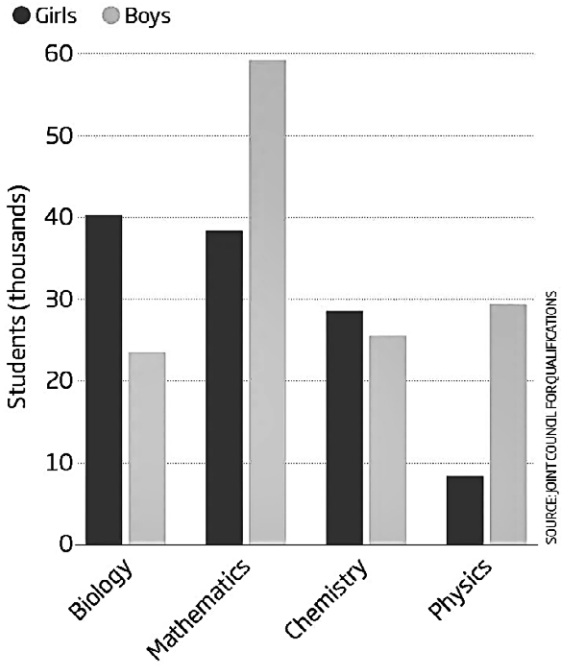
Thirty years on, it is safe to say our ambition failed. In 2016, no girls studied A level physics in almost half of the schools in England that admit girls. In the same year, just one-third of schools had two or more girls taking the subject. It is a similar picture across much of the world. Despite all the initiatives to attract more girls into physics, the proportion remains stubbornly low.

[…] Let's get one thing straight. Girls are just as capable as boys at physics. You don't need brain scans to tell you, just look at the exam results. "Girls perform at least as well, if not better," says Charles Tracy, head of education at the Institute of Physics in the UK. This year, 30 per cent of girls achieved the highest two grades at A level – typically taken by 16 to 18-year-olds – compared with 29.5 per cent of boys. And it isn't that girls don't study the subject. In 2018, just over 8300 girls chose to study physics at A level, compared with around 6000 who picked French.

The problem is that this is minuscule[1] compared with the 29,400 boys who chose it (see "Graph"). Physics was the second most popular subject for boys at A level, yet the 18th most popular for girls. "Many girls who could have had careers in physics are dropping out. It's a terrible shame that we're losing that amount of talent," says Julia Higgins, president of the Institute of Physics.

Girls opt out

Three times as many boys as girls took physics A level in the UK in 2018



[1] minuscule – tiny, very small

Something seems to be happening around the age of 16. Up until this point, most girls who have studied science have physics in their top four grades. But then they quit. Why?

For almost 20 years, the Institute of Physics has been trying to find out. "When we started looking for reasons why, we found that there was little evidence," says Higgins.

At first, the institute thought it was to do with sexism and stereotypes within physics teaching. Initiatives to address these issues had some success, pushing the ratio of girls choosing physics at A level from 17 to 23 per cent. But then the improvements shuddered to a halt[2]. […]

Even if we tackle the problem of getting girls to opt for[3] physics at school, they still face issues as they progress further through their careers. […]

For instance, research shows that women in science are more likely than men to have their emails ignored when requesting information about potential PhD[4] positions. And, on average, they need to have published three more papers in top-tier[5] journals than men to get the same academic job. And they are more likely to leave their career due to harassment and bullying. These issues aren't unique to physics: women face them across science.

To find out more about physicists' everyday experiences, the American Institute of Physics surveyed 15,000 people from 130 countries. It was the first survey of its kind to explore whether men and women have equal access to the resources they need to carry out research and present their results. Without adequate funding, lab space, travel budget and students to help with research, for example, a researchers' career can stall[6]. Meanwhile, experiences, such as being invited to speak at a conference or serving as editor of a journal, can help to advance a career.

The survey revealed that women were worse off than men on every single measure. And while there were differences between highly developed countries and those lower down the scale, the brakes are being put on female physicists all over the world. In the UK, for example, just 17 per cent of physics lecturers are women and that drops to just 7 per cent of professors. In Italy, only 8 per cent of physics professors are women.

This adds up to a constant battle for women trying to forge a career in the field. "It's the isolation women feel, it's the unconscious biases, being made to feel you're inadequate," says physicist Jess Wade at Imperial College London. "Fighting diversity battles on top of your research, it's exhausting." […]

(746 Wörter)

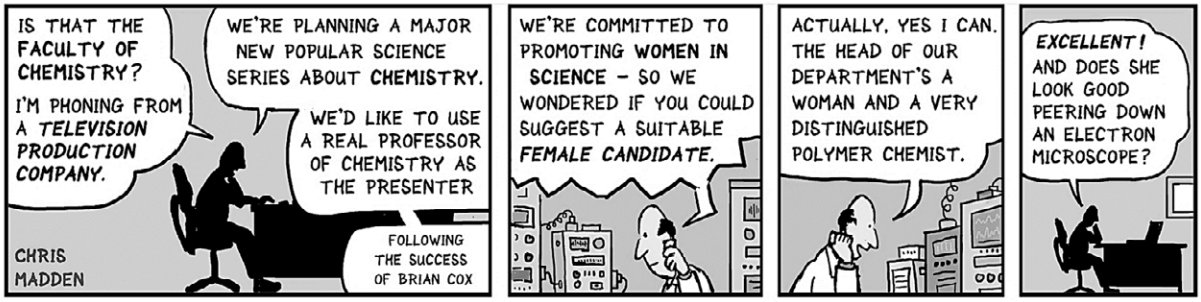
Valerie Jamieson: Women in physics: Why there's a problem and how we can solve it, in: New Scientist, 07.11.2018, URL: https://www.newscientist.com/article/mg24032031-900-women-in-physics-why-theres-a-problem-and-how-we-can-solve-it/#ixzz75x5HylC9 (abgerufen am 09.11.2021).

Hinweis
Der Text wurde gekürzt. Die in der Überschrift angedeuteten Lösungsansätze für die im Artikel geschilderten Probleme sind damit nicht mehr Teil der Textvorlage.

[2] to shudder to a halt – to stop moving
[3] to opt for sth. – to choose sth.
[4] PhD – an earned academic degree, doctor title
[5] top-tier – of highest quality, reputation or importance
[6] to stall – to bring sth. to a standstill

Material 2

Chris Madden: We're committed to promoting women in science … (2020)



Chris Madden: We're committed to promoting women in science …, 09.01.2020, URL: https://cartoonstock.com/directory/f/female_scientist.asp (abgerufen am 09.11.2021).

Hinweis
Brian Cox is a physicist presenting a popular science show on British television.