Busting Gender Bias in Computer Science and Cyber Security

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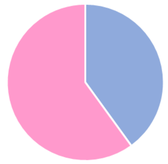
Background

Despite the advancements made by women in the employment sector and the academic success enjoyed by girls[1], women continue to be persistently underrepresented in the fields of science, technology, engineering, and maths (STEM). In Ireland, **women represent fewer than 25% of people working in jobs that use STEM skills**[2].

Research on gender and STEM tells us that in order for young women to pursue a career in STEM, **they must believe in the importance of STEM and believe in their ability to succeed in the field**[3]. Research conducted by Microsoft has revealed that most girls become interested in STEM at age 11, but their interest starts to wane by age 15.

Working in STEM in Ireland

LC Biology



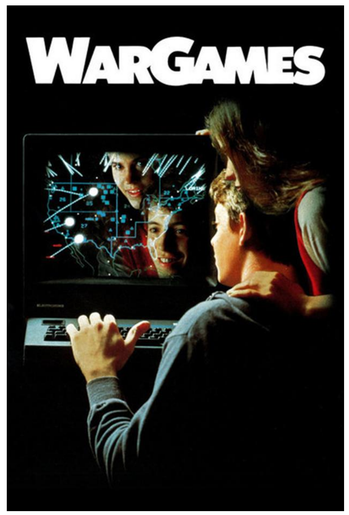
LC Physics

Stereotype Threat and Implicit Bias

An **implicit bias** is an **unconscious** association, belief, or attitude toward any social group.

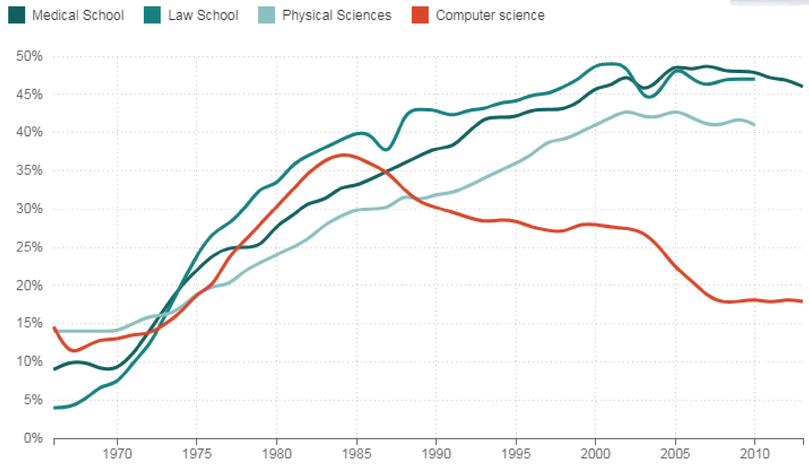
Due to implicit biases, people may often attribute certain qualities or characteristics to all members of a particular group, a phenomenon known as **stereotyping**.

Such biases do not necessarily align with our own sense of self and personal identity.



What happened to women in Computers?

What do you notice about the numbers of women studying computer science? Why do you think this is?



Source: National Science Foundation, American Bar Association, American Association of Medical Colleges
Credit: Quoctrung Bui/NPR

Innovative Pedagogy

Our project aims to infuse science with the **arts and humanities**, utilising **Philosophy for Children (P4C) and Storytelling** to develop a growth mindset and critical thinking.

Research emphasises the importance of instilling self-belief and confidence in girls to engage in STEM. Through hands-on activities like First Lego League/Micro:bit - Do Your Bit and AR/VR/XR immersive activities we will engage girls in coding, robotics, and virtual reality experiences that will foster curiosity and cultivate enquiry.

Joining our project

If you would like to learn more about our project or have your school participate, we would love to hear from you.

Visit cyberwise.ie

Contact us: karen.maye@ucd.ie

Funding and partners

References

[1] OECD (2012). Equity and Quality in Education: Supporting Disadvantaged Students and Schools - Spotlight Report: Ireland, OECD

[2]STEM Education Review Group, (2016). A Report on Science, Technology, Engineering and Mathematics (STEM) Education.

[3]Accenture (2014). Powering economic growth: Attracting more young women into science and technology.

[4]Weir, S., Kavanagh, L., & St. Patrick's College (Dublin, Ireland). Educational Research Centre. (2018). *The evaluation of DEIS at post-primary level: Closing the achievement and attainment gaps*. Dublin: Educational Research Centre

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