

Contrasting UK and Canadian Engineering Education

Executive Summary

Throughout history, engineers have developed technology that has shaped the world around us. As technology becomes more and more ingrained in our culture, it is important to have a healthy engineering economy, to ensure that our species continues to make great progress through technology. Additionally, as technology has a significant impact on public policy, it is important for engineers to be visible and active in devising and updating public policy. The general public cannot be expected to understand the intricacies of the engineering pros and cons of technological solutions and the public policy issues that accompany these solutions.

The perception of engineering in the UK is very different from that of Canada, owing to the historical development of the profession which has led to a certain public mindset:

- In the UK, modern Engineering is confused with trades in the public's mind and in terms of licensing
- The title of "Engineer" is protected in Canada, which helps differentiate it from trades and gives it a higher status
- Engineering is perceived as male-focused and there is ignorance of the social impact

The UK and Canada face different challenges when it comes to engineering education and recruitment:

- The UK does not have enough students entering into engineering programs, but has market demand for engineers
- Canada has a growing number of engineering graduates, but their skills are not matched with industry needs, and there is a geographical mismatch (more demand in the west, more engineers graduating in the east)

There are a few reasons that students are not pursuing engineering in the UK:

- The public perception problem leads to schoolteachers and other role models giving out advice that is not in favour of engineering
- Engineering studies are not more difficult than other fields (in contrast, Canadian engineering education is seen as difficult which gives it a higher status)
- Other fields are much more visible and fashionable

We propose the following recommendations:

- The formation of a single engineering identity / title in the UK, distinct from trades
- Reinforcing the apprenticeship system and making it a mandatory part of a university engineering program, in both the UK and Canada
- Raising awareness of the opportunities available in the Canadian West, and promoting enrolment in engineering fields that have high industry demand

If the momentum of technological innovation continues, the engineering profession has the potential to become the world's single most influential profession. We, as engineers, need to take an engineering approach to solving our profession's identity and structure problems. As engineering becomes more visible, the public will naturally reshape its view of the profession, which will lead to more engineers in the workforce, more jobs for engineers, and more engineers in positions of influence in society.