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Do Technical Universities Teach the Same “Technology” Today as They Did 100 Years Ago?

Going back to the beginning of the 20th century in the history of technical universities in Sweden and comparing it with the discussions about the education of engineers today, surprising similarities can be found. In this presentation I examine the concept of technology itself, and show that, although the subject matter in engineering education has changed following the technological development, the basic idea of technology has been relatively static.

Encyclopaedia Britannica starts its definition of technology as “the application of scientific knowledge to the practical aims of human life” and the Swedish National Encyclopaedia defines technology as “the methods of human beings to satisfy their desires by using artefacts”. In both definitions there is a dualism comprising both the aims and desires of human beings and the scientific knowledge and artefacts which are used to satisfy them. Engineering education has concentrated on the latter part, scientific knowledge and artefacts, but not given the students very much knowledge about the former, the aims, needs and desires of human beings, and thus has not enabled them to work with both sides of the dualism, which together comprise the concept of technology.

This narrowing of the concept of technology has societal, environmental and other consequences, which I do not discuss in this presentation. Instead, I discuss it as a gender issue. When trying to recruit female students, Swedish universities often advertise a broader concept of technology, which is expected to attract women. However, the educational practice is still based on the traditional concept. There have been both educational and societal reasons for the preservation of the narrow concept of technology, all through the twentieth century. One of them, I argue, is that the broadening of the concept of technology in engineering education, to include human aims and desires, would risk the established gender order both in the education and, consequently, in the society.