

# Technology and Pedagogy – How to Learn Technique

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**Summary.** A limitation of future development is the lack of ability to use technical equipment. To avoid this problem it is necessary to concentrate on pedagogy of technology – how to teach and learn technology? The paper also tries to break down some attitudes in both sides of teaching technology. The problem is mainly based on the lack of conversation and understanding between two sciences: Technology and Pedagogy. The aim of this paper is to help this conversation to begin and continue – this acts as a transmitter between these sciences. Paper explains basic ideas of both sciences with such language that the other is able to understand.

## 1 Introduction

Traditionally, technology and pedagogy are considered to be as far from each other as two issues can be. In common thinking, technology is a practical science or even only *doing* while pedagogy is a more humanistic science, *theory*. Superficially, they have nothing in common, and may even be viewed as highly dangerous concepts.

To many members of the general public, technology is seen as something to do with machines and equipment, while technical equipment is seen as difficult to use and expensive. Because of the insatiable need for energy, it is feared that technology will finally destroy the world or at least energy resources. At the same time some extreme viewpoints present pedagogy in terms of playing with human brains, brain washing and encouraging dangerous thoughts. It seems to be a route to manipulate humans to do unethical acts.

A short check of publications from both sides of these sciences shows the existence of the barrier: pedagogues are not very interested in education of technology while technicians are not too keen on pedagogy. In technology the idea of pedagogy is the fact that *the student is responsible for the results of studies, and the teacher's task is just to make the information available*. Thus there is no need for good teaching in technology, just good students!

Before we determine how to teach technology, we have to dismantle the perceived barriers between these sciences and clearly define what is understood by technology and pedagogy. Technology is everywhere, or at least instances of technology are, for example mobile phones, cars, computers, coffee makers, vacuum cleaners, bicycles, pencils, overhead projectors, videos, barbeque grills, plus bioprocesses such as bread making and cooking.

Through this enormous range of technology, we can see similarities between all these items. They are all *tools*, helpers and things that make life easier. This is an important issue to remember when talking about usefulness and dangers of technology. As any tool, products of technology can be used in both good and bad applications. The basic nature of technology is thus to help, *to create tools for human beings*.

Pedagogy is the part of science, which concerns issues of learning and teaching. It develops theories and methods for better understanding of processes in learning and teaching. It also tries to implement these theories into the real life. Supporting this are scientific studies of the thinking and learning of human beings.

So after all, what really is the difference between these two sciences? They are both interested in improving and helping human activities. For this purpose they are both interested in target processes: pedagogy and processes of learning, technology and processes of doing.

Learning is in fact a very important issue in technology. Technical development is dependent on skills such as learning of natural sciences, developing a holistic view, realism and an attitude of *there are no problems, only challenges*. A person can have these skills by nature, as a talent, but these can and mostly must also be taught – and in a science called technology these are basic requirements for a profession.

Once technology has developed tools for easier life, there are also a few questions to be asked: Does the user of a tool know how to use it? Who and how to teach? How much does the user need to know?

To be able to live in a modern society, we all need to know something about technology. To be able to develop better tools some of us must understand technology well. To be able to understand at least some of technology we need to know how to teach and how to learn, we need