

THE BICYCLE'S STORY CREATIVITY AS A TECHNICAL COMPETENCE DURING HUNDREDS OF YEARS

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Abstract

Competences is one of the most often used ideas in the pedagogical literature today. One way of classification of different types of competences is in accordance of the different teaching fields. One of the main characters of the technical or technological competence is the creativity.

Intruduction

For teaching technology as a shool subject new approaches and aspects are necessary beside the traditional ones if we want to fulfill the new requirements. Some of these new charachters are:

- The complexity, what means involution of different scienitific fields, involution of different approaches and activities as balance between the manual and menthal work.
- The hystorical way what schould be emphfisazed. This is a key to the complexity
- The economizing thinking of way which srpeads from the questiones : How much does is coast ? Which is the cheaper or sooner solution ? How much can it be sold ? or Which are the best PR or marketing ways ?
- The creativity of the pupils (and teachers) what schould be encouraged if we want to have new creativ generaaation.

Problem solving

The traditional element of the school teaching is the *task*. It has definite conditions. The way of solutions can be taught as algorithmes what can be applied for the given task or it can be modified a bit.

The new way of teaching can be the so called *problem solving* where we focus on a real human need from which the problem arises. At the same time all the different conditions should be taken into consideration. In order to find good solutions to a problem we should think over all the real conditions such as:

- the place where the solution exits
- the materials and their characteritic parameters
- what methods of material processing can be used, and so on.

But all the above elements usually results just a common solution if we do not have creative ideas. To find interesting new solutions a human creativity is neded what can be counted as a talent but it can be learnt as well. One way of learning the creative thinking is the overveiew of the history of the different technical inventions.

The bicycle as an example

The history of this well known equipment started more than two hundred years ago. The basic question was how to move easier from one place to another.

- One of the ideas was if the human being could have wheels.
- But the road is not staight, I should turn
- And it was too slow and hard to drive

- We need bigger velocity – bigger wheels, but it is dangerous
- Let use trasmission –chain
- It is not comfortable - schaking
- Move comfort and safety is needed

And new and new questions arised and arise even now. The story is not finished. The inventors find out new solutions today too . Old and new pictures illustrating the development of the bicycle will be presented at the conference

Literature

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