SCIENTIFIC Research

ELECTRONIC
ISSUE

Training Strategies in Technological Education

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Summary

Some main problems in technological education are analyzed which define its perception as an active training practice. The author puts the stress on main trends in intellectual and practice-oriented education where an analysis of real technological activities of school boys and girls is made.

Key words: technological education; global and synthetically approaches in technological education; learning activities; practical activities; technological practices; technological project.

Basic approaches to technological education

The problems in technological education as seen in Bulgaria's educational practices (and to a certain extent in other countries as well) are of a very uneven nature. Technological education had often been neglected or boosted for different reasons – sometimes due to intellectual under-evaluating ideas or to lack of academic understanding of school general education policy. Compensatory mechanisms because of educational shortsightedness should be found in maximizing quality and processional potentials. Thus the intersection between both characteristic features shows generally pedagogical as well too specific peculiarities.

From a praxiologic point of view, technological and training activities show two very general approaches:

- ➤ A research approach – e.g. observation, survey, experiment, analysis, evaluation;
- ➤ A practical realization – including elements of the realization, intension, construction, elaboration and utilization.

The first approach is very often neglected due to the understanding that it is essential for natural sciences, therefore it's not typical to be applied for technical, technological

and educational purposes. According to modern understanding of scientific reflection, analytical skills and activities in research (which are intellectual by nature) build up the basis of polyvalent interpretation of technological reality (utilization and anthropological perception). Therefore, these activities should be connected to the technological orientation of the line of actions; they do not include a theoretical foundation.

The second approach - practical realization - follows the principle of uniting education with practice (life). Contrary to the practice as seen in the last decades (where practice and life were seen as an imaginary category), practical realization (in Western societies) shows clearly defined - global and synthetically – levels (3).

> The global level is built up by an immediate and empirical approach towards all aspects which characterizes a certain area of practical ………..

This appears to be one of the reasons why technological preparation hasn't been acknowledged as a regularly taught school subject – it is thought that it's polyvalentness and integrity are inherent to all educational tendencies.

> The synthetic level is realized when all subjects (knowledge) already taught at school are applied to real life and certain decisions for life should be made.

This includes the term "a technological project" – a detailed and fair sign of aims, conditions, means, and limitations for the realization of the idea and term for "production contract" which connects all participants and forces them to meet the requirements of the contract.

These two terms have a tactical and a methodical meaning for the organization of pedagogical practices – they set a model for the elements of social and technological processes which cover the offer of goods and services.

This scope appears to be larger because of the fact that technological approach has much more in common with the intentional and pedagogical approach – the contract as a result and based on the technological project defines students' activities as a group, differentiates their role and responsibilities. It is thought than when these structures (meanings) are well recognized, defined and strictly applied and when they are the product of a rich practical experience,

they'll form a technological character in research knowledge under school conditions (ibid.).

All immediate constituents of technological education in school should be bound to real existing conditions in all spheres of social activities. This applies to all objects under research as well projects, in particular – to teaching and producing tasks. Thus learning activity should be regarded as a reflection of social practice, and therefore these strategic lines outline the main understanding of how active education should be treated.

The Transposition: Learning Activity – Practical Activity

We are going to observe the interdependence and concordance between these two processes which aren't characteristic to technological education only, but they especially refer to the meaning of their connection.

The didactical nature of technological education differs a lot from the characteristic of humanitarian preparation in what academism is concerned. The educational content should be subordinated not only to pedagogical intentions – equal attention should be paid to objective factors of practical students' activities like themes, processes' organization, resource supply, social roles, etc. especially when a practical activity is treated like a project.

A distinctive feature of technological education is to be found in a very untypical interaction between

- ➢ Social technological knowledge in the form of human technological practice (experience), and
- ➢ School activity in the form of willful educational influence (education).

A specific feature of technological education doesn't bear the characteristics of a reduced image but shows the features of pedagogically aware and controlled transposition of a.m. elements. This is very important to be understood because the difference between objective technological experience and students' learning activities should be definitively and very cautiously evaluated and in details analyzed if we really

want that students realize and become aware of practical activities - not just learning exercises. In theoretical terms it means that technological experience owns leading functions and technological experience defines the contents of transposition.

From another point of view it is evident and one has to admit that in order to be realized a real practical activity there should be some requisites which act as key factors and deterring factors simultaneously and are connected to the educational school environment in the form of students' and teachers' potentials, school institutions, material and informational resources, standardized requirements to syllabuses, the characteristic features of economic and social environments as well regions. In fact the complex influence of all those features defines the choice of a given technological practice.

It is advisable that to the enlarging range of technical education such activities should be included and developed which are entirely oriented to the trends on which technology is based. There are 3 criteria to be considered:

➢ Implementation of new techniques and information technologies;
➢ A thorough analysis of labour activity from a technical, social and historical point of view;
➢ Creation of terms from technology.

In order to produce didactically understandable terms (without being very captious) one should apply and try to connect the following:

➢ Functioning of mechanisms and applied materials where the differences build up the base for technical solutions;
➢ Properties of materials and characteristics of forms;
➢ Specific and characteristic activities in production;
➢ Operating principles of assembly lines – technological and functional distribution of tasks;
➢ Economic and social interrelations.

No arguing that "without accepting a minimal amount of conceptual constructions … we are not able to talk about technological education". (3) Differentiation in educational matters in Bulgaria as well abroad by taking into consideration students' age is becoming

evident through various technological activities in households, and manually done operations are adherent to organised, economically determined labour, production activities and services.

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