RESEARCH ARTICLE

2023, vol. 10, issue 2, 267 - 269
https://doi.org/10.5281/zenodo.#

Technological and vocational education – A basic component in modern education

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Abstract

In this article we wanted to clarify that in the process of education reform, the development of a new curriculum occupies a central place. The school and curriculum must provide a coherent and flexible framework, in which cooperation, thinking, independence, freely expressed opinion, tolerance and values assumed by each are defining dimensions. I applied the method: What do I know?/ What do I want to know? / What have we learned? We came to the conclusion that the formation of systems thinking and teamwork skills become essential for stimulating initiative and creativity.

Keywords: technological education, electives, education

1 Introduction

Education reform is the realistic solution to strengthen its performance character. Although hardly recognized by some media, education reform is the locomotive of reform in society.

The National Curriculum is structured in seven curricular areas, designated based on epistemological and psychopedagogical principles and criteria.

In the vision of the National Curriculum for compulsory education, Technology Education is a common core subject, component of the Technologies curricular area. The curricular areas contain subjects included in two categories: the common core – mandatory for all categories of students and the optional curriculum (available to the school for high school education).

2 Development of technique-centered thinking

Those who gave life and consolidated locally or nationally the status of Technological Education are teachers of Technological Education. The teachers of Technology Education are:

- highly qualified teachers, who have not a single specialization, but at least two, some even 3 specializations, which means skills from several fields, formed not in 3-5 years of university studies, but in 7-9 years of university studies (bachelor + postgraduate studies of specialization in Technological Education, part also with specializations in Computer Science or ICT), qualifications that enable them to achieve modern, interdisciplinary and student-centred education;
- people who wanted to be teachers of Technological Education;
- are teachers who have financed their specialization in Technological Education (except for a small number of people who have benefited from two funding programs (PIR and POSDRU);
- are people who love preteens, who have an inventive spirit and who have shown students, parents and other teachers that at school students can be cheerful and motivated, that they can be proud of the product of their work, that they can cooperate effectively with each other or that they can make an informed school or professional choice;
- are teachers who, locally or countyly, are involved in projects to develop the school-community relationship, in organizing exhibitions, contests or activities to promote a healthy environment and lifestyle, as well as environmental and personal life protection technologies.

Technological education aims to develop thinking centered on technique and directed to understanding the great principles, which explain the discoveries of science, aims to develop intellectual curiosity, inclined to personal research, to provoke a reaction attitude towards the technical environment, to stimulate positive and critical spirit, to fuel creativity. In the information society, technological education gains new valences.

Mechatronic technology, compatible with the new society, differs essentially from the traditional one in that it includes, along with material and energy, the information component. Technological education is a component of the general culture of the young person, expressing the mutations that have occurred in the sphere of general culture.

Technological education is neither technical-vocational education nor theoretical-scientific education; it is not reduced to practical training, initiation into a traditional craft or a modern profession; So it's not an early professionalization.

Technological education has a specific interdisciplinary character and at the same time dual: theoretical and practical, scientific and technological. It is important for each young person to be able to identify their own value system in order to self-evaluate and self-discover their vocation.

The discipline Technological Education, as a distinct object of study of the curricular area Technologies, is found in the curriculum both for compulsory education - primary and secondary - and for high school education. The new curriculum of the discipline Technological Education is designed in modular structure, thus ensuring flexibility of approach. The curriculum has its own dynamics, allowing a differentiated approach to modules over time. The sequence of modules within the core curriculum has been established according to age peculiarities, importance of the technological field and social impact.

The modular structure allows the student to get to know various areas of activity. For secondary education, the modules address the main technological areas: technology of non-metallic materials (wood, etc.), technology of metallic materials, energy, electrical engineering, electronics, agricultural technologies, gastronomy, graphic language (technical drawing), organization of surrounding space, information technology. Due to its interdisciplinary character, Technological Education will address in the high school cycle modules that include border areas: mechatronics, unconventional technologies, communication, etc. Because Technological Education for the high school cycle is addressed to students of theoretical and vocational high schools, it is meant to help students penetrate the concrete, to understand the impact of technological evolution with social and cultural life.

The content of the modules does not specify time/homework allocations and consequently the teacher is free to determine the weight of theoretical and practical activities.

The framework objectives of the discipline Technological Education are defined according to the cycle and are found as framework objectives for the component modules.

For example, for secondary education, framework objectives are formulated in terms of competences and capabilities:

- developing the capacity for design, realization and evaluation of products;
- understanding the development of technology and its implications on the environment and society;
- capitalizing on specialized terms in communication;
- training cooperation skills in order to produce a product;

The contents offer a wide range of activities through which the student can cover his sphere of interests, are adaptable to local resources and correlation with the objects of study in the other curricular areas is achieved.

Technological education must also be understood as a challenge to stimulate interest in increasing the efficiency of the educational act as a whole. This major objective can only be achieved through concerted action by the entire teaching staff in schools. The activities within the optional classes (curriculum at the school's decision) start from the initiation of a problem that highlights a technological, social or cultural need, customize concrete solutions of themes and end with the capitalization of the finished product, thus going through various technological operations of various fields of activity. For some applications (optional) products are made through group activities, assuming specific roles.

The structure of the discipline Technological Education involves, in accordance with the philosophy of the national curriculum, two components:

1. Core curriculum with modules included in the common core of the discipline and has mandatory status for all students;

2. curriculum at the school's decision (optional) which represents the non-compulsory segment and consists of:

- deepening of the modules in the common core;
- extensions of modules from the common core, depending on students' options, material base or local specificity;
- modules complementary to those completed within the core curriculum;
- modules that capitalize on local specificities.

3. Conclusions

The curriculum at the school's decision is developed in accordance with the core curriculum. The structure and contents of the modules, which capitalize on the local specificity, will be developed by teachers from the school unit where it is proposed to develop such optional packages. The assessment of capacities, skills, abilities, knowledge and aptitudes will be done according to the methodological guide developed by the National Service for Evaluation and Examination. The curriculum for Technological Education in Secondary Education aims to know and use the procedures specific to the technological environment, allowing, along with accommodating young people with the social, economic and cultural environment, professional orientation and social insertion of young graduates.

Technological education is a new cultural formation, born from the report of modern man with technology. In the information society of the XXI century, technological education will be the decisive element to generate real wealth in the Romanian society.

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