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Interdisciplinary and integration of technical education

Introduction

The content of teaching of technical education at various levels is the task of creating the students' relationship to the work, materials, labor and equipment manufacturing practice. They create the basic skills and habits while working with simple tools and machines used also for small home maintenance. Yet it is also necessary to instill in students the relationship and attitude towards technical and natural sciences as a whole. Now is catastrophic lack of interest in this type of education and students from both sides, and with little support from the educational institutions. The quality interdisciplinary instruction linking the technical and scientific fields, are basic fields of education. It creates a relationship with the students in these fields when deciding on the level of study and on the choice of their profession.

To secure the active development of students' creative abilities of individuals, must be educational process deliberately and systematically prepare. Pupils are not encouraged to re-inventing, but more to the invention and creation. Independent and creative work, it is possible to establish if students learn basic job skills and procedures. That means letting the passage of the necessary conditions for self-expression, decision making and use of experience gained, abilities and interests.

1. Methods of active cooperation between different disciplines

A serious problem is the fact that technically oriented subjects are being focused on the work site rather than on technical education. In many countries exists technical education of students in the lower grades of primary schools. For example: education in England. Here are subject basic of technology as a main object. This object contains two basic components:
– Planning and Technology;
– Information technology.

The first component is aimed at identification of the needs and possibilities, making proposals and planning, execution and evaluation. In its essence regards the development and use of products, work with materials, work in frame of human needs, expansion possibilities.

The second component is focused on mediation of information, planning and represented real situations, their development, measurement and control of

physical changes. It is the development of information-technical skills, familiarization with the computers as one of information source.

2. Cross-curricular links

Each educational area is defined by characteristic of educational areas, which defines the status and importance of educational areas in basic education. Each educational area is defined characteristic of educational areas, which defines the status and importance of educational areas in basic education. It also describes the educational content of the educational fields of education. In this area is implied the continuity between the educational content of the first degree and the second stage of basic education. Target builds on the characteristic of the educational area. This section defines what the student is guided through the educational content, gradually reaching key competencies.

The integration of educational content must respect the logic of construction of educational fields. The basic condition for the functional integration is a qualified teacher. Very important is the cooperation of individual teacher.

3. Integrated learning

Curricula are developed at two levels - state and school. State level in the curriculum documents are the National Training Programme and framework educational programs which define the initial education as a whole. Basic school present education programs, under which carried out the individual schools.

School educational program (curriculum) is possible, at least for the lower grades, based on integrated education. In respect in integration how to fill the contents of teaching time. The teaching must be contained in individual themes and activities from all areas listed in the core curriculum.

Implementation of integration plans indicate educational program. Every teacher in the classroom itself takes place of integration requirements.

Conclusion

Transformation of the teaching subjects in our schools is not and certainly will not be easy. But it is a necessary to do. Today the school is not the only source of information. It faces competition from more attractive media and electronic resources. Therefore, the school also seeks to change its focus from traditional transfer of knowledge to master methods to provide information and apply. School must give information for pupils and keep it for understanding.

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educational content. The task of school is to provide a systematic and balanced structure of the basic concepts and relationships that will allow the student to include new information in a meaningful context, knowledge and life experience. The educational system must respond to previously unknown risks – the superficiality of some of the information, imbalance and fragmented knowledge, inability to focus and evaluate, and last but not least, the information overload.

References

Honzíková J. (2004), *Projektová metoda a její aplikace* [in:] *Technológia vzdelávania: vedecko--pedagogický časopis*, Nitra: Slovdidac, s. 5–8. ISSN 1335-003X.

Novotný J., Honzíková J., Mach P. (2008), *Alternativní přístupy k technické výchově*, 1. vyd., Plzeň: ZČU, 264 s., přílohové CD ISBN 978-80-7043-626-4.

Zukerstein J. (1999), *Aktivizační metody a jejich význam* [in:] *Modernizace výuky v technicky orientovaných oborech a předmětech*, Olomouc, UP, s. 135–137.

Abstract

Transformation of the teaching subjects in our schools is not and certainly will not be easy. But it is a necessary to do. Today the school is not the only source of information. It faces competition from more attractive media and electronic resources. Therefore, the school also seeks to change its focus from traditional transfer of knowledge to master methods to provide information and apply. School must give information for pupils and keep it for understanding.

Key words: technical education, IT (information technology).

Interdyscyplinarny i integrujący charakter edukacji technicznej

Streszczenie

Transformacja treści i metod nauczania przedmiotów szkolnych w najbliższym czasie nie jest i na pewno nie będzie łatwa, ale jest zabiegiem koniecznym do zrobienia. Dzisiaj szkoła nie jest dla ucznia jedynym źródłem informacji. Na co dzień konkuruje z bardziej atrakcyjnymi mediami i różnorodnymi zasobami elektronicznymi. Dlatego szkoła musi zmieniać punkt ciężkości z tradycyjnego transferu wiedzy na opanowanie metod przekazywania informacji i jej stosowania. Szkoła musi stać się dla uczniów ważnym źródłem informacje i prowadzić do jej zrozumienia.

Słowa kluczowe: edukacja techniczna, TI (technologie informacyjne).