

**Jan Novotny, Jaroslav Zukerstein,
Jan Cerny**

Popularization of technical education

Edukacja - Technika - Informatyka 1/1, 88-92

2010

Artykuł został opracowany do udostępnienia w internecie przez Muzeum Historii Polski w ramach prac podejmowanych na rzecz zapewnienia otwartego, powszechnego i trwałego dostępu do polskiego dorobku naukowego i kulturalnego. Artykuł jest umieszczony w kolekcji cyfrowej bazhum.muzhp.pl, gromadzącej zawartość polskich czasopism humanistycznych i społecznych.

Tekst jest udostępniony do wykorzystania w ramach
dozwolonego użytku.

Popularization of technical education

Introduction

Our society underwent many social-economic changes in the past years – changes in ownership relations, working and family environment, as well as changes in the system of social values, which brought many people to situations requiring different way of thinking and different procedures than those common before. Changes in work style in our schools occur with the change of our social environment.

Currently a lot of technically-oriented universities are fighting to outflow of student's faces and with barrier disinterest of studying concern in technical field. Source of such a phenomenon is little awareness of pupils of the technical colleges and universities. A very good way to eliminate this barrier is addition to the emerging classical days of open doors and organizing such events that serve to popularize and disseminate the technology among primary and secondary schools. Such events are regularly organized by Department of Applied disciplines of the Faculty of Production Technology and Management, Jan Evangelista Purkyně University in Ústí nad Labem, Czech Republic. These actions have put some basic goals:

- improve awareness of technical subjects and technology,
- improve and increase mutual awareness of belonging to the university, faculty and regional education,
- popularizing the teaching of technical subjects at regional primary and secondary schools,
- enable pupils to make themselves attractive and entertaining physical experiments and experiments from other sectors of technical education,
- provide teachers and participating schools themselves to inspiration and self-education.

Individual action, which are organized by the Department of Applied disciplines FPTM UJEP tried to popularize technical subjects are individually detailed in the following chapters.

1. Science Days

The Faculty of production technology and management take place in the premises of laboratories and workshops scheduled event called Days of science.

The event is organized for the target group of pupils in primary and secondary schools in order to become familiar with the fun and fascinating form of physics and other technical subjects. Pupils have the opportunity to penetrate the secrets of material testing, production of prototypes of three-dimensional printing, plastic etc. The greatest interest, however, enjoy event called Physics experiments – physics fun. Pupils are able to see and try these interesting and often surprising principles and experiments in the field of electrical engineering, mechanics, microwave technology and other physical disciplines. The whole event presents scientific activities of the Faculty of production technology and management in various areas. Because the results are presented in a fun and engaging manner, gives the students a natural interest in technology and engineering fields.

In this short course can students found inspiration in the field of technical education, which may use in the future This action also increase their imagination, creativity and, last but not least, the skill. That may be a course in the Days of Action Science, where there are teachers or students filling tied syllabus given time allocations. In this case, can not happen, that this rate has remained voluntarily attended only a means to achieve credit points, or mark, but a means of inspiration, entered implementation of ideas, creativity, knowledge and skills. Physics and other technical fields can be very fun and engaging. It depends only on the form with which students submit to the inspiration and technical disciplines interested in the rest of their lives.

2. Wood techniques as a special course in teacher training

Work with wood itself is inherently very attractive, perhaps this is due to the fact that wood is a natural material, used from time immemorial, and its diversity, texture and colour brings satisfaction with final product. The courses can work with wood, to teach students to use basic tools, to familiarize them with the basic technologies include design way, can not access the more complex technologies challenging time and patience.

Work with wood has always its charm and interesting features, it becomes a motivating concern of an optional course. In more advanced woodworking techniques, students need to convince the selection of suitable material, the accuracy needed for processing, and the importance of respecting the heterogeneous nature of the material, given its construction. Wood material is significantly aesthetic and decorative, its charm is multiplied when it is pressed the final shape and meaning.

The most popular decorative techniques are for example timber inlaid, inlay, wood carving, wood turning and more. These techniques can be understood as a tool for deeper penetration into the possibilities of timber, allowing authors to express their individuality, diligence, imagination implementation itself. Sample

rate woodworking machinery is responsible for the students to offer these technologies as a superstructure on the subjects of compulsory nature.

The timber technology and some other are rewarding with regard to the imagination and creative elements introduced by the author of that article. Students who themselves makes a product that until now viewed as impossible to produce on their own, get the proper taste for other creative work, which often leads to a satisfactory outcome educators efforts. In more advanced woodworking techniques, students need to convince the selection of suitable material, the accuracy needed for processing, and the importance of respecting the heterogeneous nature of the material, given its construction.

Optional content of the course gives us an opportunity to motivate students in relation to wood as renewable natural resources. It is necessary to obtain a broader view and understand the general dynamics of the relationship between man and natural materials.

3. Spring School of Technique

Faculty of production technology and management J.E. Purkyně University in Ústí nad Labem, Czech Republic is involved with the Faculty of Education and the Faculty of Natural Sciences in the preparation of future teachers of technical subjects in master degree, program for Primary Teacher Training School. Students in the study undergoing continuous teaching experience within which they may apply theoretical knowledge acquired during their studies in their subjects. Future teachers have the opportunity within the project „Clinical School technical interest and creative activities” to try to encourage pupils and staff interest use the complete laboratory technical support faculty. Clinical practice of this type in this field of technology have a strong incentive effect on both target groups – students of 3rd year of study Teacher Training for Primary Schools Technical Education field for the 2nd level of primary schools and primary and secondary schools who are „Spring School of technique” attended.

Target of the organization of action such this was implementation of clinical interest of technical schools and creative activities for students of teachers of technical education. Clinical School was targeted at strengthening the practical component of teaching students' interest in technical and creative activity, it means mental area for which students are trained theoretically but not practically. The practice was intended for students and teachers of technical education took place in the field of technical activities which was conducted by Faculty of production technology and management for primary and secondary schools this year under the name „Spring School of Engineering”. Students will be able to teachers under the guidance of experienced practitioners in practice to apply their pedagogical skills in organization and management of interest activities. The project was implemented as the practice of students in conditions that can

not be provide in the primary or secondary schools both material and technical reasons and because of professional personnel.

Conclusion

The present process of education can be regarded as a very complex system, which takes place in terms of interaction and cross-objective and subjective factors. Personal potential and actual pupils and teachers are changing. This potential is beginning to adapt to social conditions present, and future of human society. Change of living conditions and lifestyles affect the transformation of Czech education, which is currently undergoing some changes, in which the transformations from conventional to traditional forms of teaching are preferred.

Such events bring to the action participates students satisfaction. Students themselves gain this approach a positive attitude to study technical subjects. Pupils whom themselves carry out the operation, or experiments that, until now regarded as very difficult and completely impossible to understand desire to obtain adequate for further study technical subjects. In the active pupil's participation in the event where they can test themselves by demanding experiments and then penetrate into the matter, students will gain a positive relationship to a given subject matter and often clearly decide on the suitability of the chosen technical fields. Content of such short courses gives us an opportunity to motivate in relation to technical subjects. It is necessary to obtain a broader view and understand the general dynamics of the relationship between man and the technology.

Literature

- Honzíková J. (2004), *Projektová metoda a její aplikace* [In:] *Technológia vzdelávania: vedecko-pedagogický časopis*, Nitra: Slovdidac, s. 5–8, ISSN 1335-003X.
- Novotný J. (2004), *Možnosti alternativní výuky při práci se dřevem* [In:] *Modernizace vysokoškolské výuky technických předmětů*, Hradec Králové: Gaudeamus, s. 55–58, ISBN 80-7041-342-5, ISSN 1214-0554.
- Zukerstein J. (1999), *Aktivizační metody a jejich význam* [In:] *Modernizace výuky v technicky orientovaných oborech a předmětech*, Olomouc, UP, s. 135–137.

Abstract

Our society underwent many social-economic changes in the past years – changes in ownership relations, working and family environment, as well as changes in the system of social values. Currently a lot of technically-oriented universities are fighting to outflow of student's faces and with barrier disinterest of studying concern in technical field.

Key words: technology education, studying of university.

Popularyzacja edukacji technicznej

Streszczenie

W ostatnich latach nasze społeczeństwo uległo wielu przemianom społeczno-ekonomicznym. Nastąpiły zmiany w obszarze własności, pracy i środowiska rodzinnego, jak również zmiany w systemie wartości społecznych. Aktualnie wiele uniwersytetów kształcących na kierunkach technicznych zabiega o zatrzymanie odpływu studentów przez likwidowanie barier zniechęcających do rozwijania zainteresowań technicznych.

Słowa kluczowe: edukacja techniczna, studia uniwersyteckie.