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Tekst jest udostępniony do wykorzystania w ramach dozwolonego użytku.

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TEACHER OF VOCATIONAL SUBJECTS AT SECONDARY VOCATIONAL SCHOOLS AND CONTINUING EDUCATION

Summary

The article presents the Slovakian educational system in connection with the idea of continuing education. The aim of continuing education as part of whole life education is a constant process of acquiring qualification in order to improve professional competencies of the teacher. Offering up-to-date information to the students with the use of ICT (Information and Communication Technologies) can make the classes more interesting which in effect will catch student's attention.

NAUCZYCIEL PRZEDMIOTÓW ZAWODOWYCH W ŚREDNIEJ SZKOLE ZAWODOWEJ I JEGO EDUKACJA USTAWICZNA

Streszczenie

Artykuł prezentuje słowacki system edukacyjny w odniesieniu do idei kształcenia ustawicznego. Celem kształcenia ustawicznego jako elementu edukacji mającej miejsce podczas całego życia, jest stały proces zdobywania kwalifikacji w celu poprawy profesjonalnych kompetencji nauczyciela. Oferowanie najświeższych informacji studentom przy użyciu TIK (Technologia informatyczno - komunikacyjna) może uczynić zajęcia bardziej interesującymi, co w efekcie przyciągnie uwagę uczniów.

A school reform is being implemented into primary and secondary schools in Slovakia during the school year 2007-2008. This reform concerning secondary schools implies not only changes in school names, school curriculum of different school departments, but it also contains changes concerning career progress of pedagogical employees. In the framework of career system we differentiate between a career degree and career position. Under career degree come a trainee teacher and senior teacher, as well as a teacher with the first and the second attestation. Career position includes a pedagogical employee, a specialist: class teacher, child counselor, introductory teacher, head of subject board, coordinators. In connection with the above mentioned, the Ministry of education of the Slovak republic

accepted a new regulation no. 445/2009, which came into force on November 25, 2009. It is concerned with continuing education, credits and attestations of pedagogical and vocational employees. Another legislative standard which is connected with the school reform is the regulation no. 437/2009 Coll., of the Ministry of Education of the Slovak republic which establishes eligibility and special qualification requirements for each category of pedagogical and vocational employees.

The aim of continuing education as part of whole life education is a constant process of acquiring knowledge, skills and qualification in order to keep, restore, improve and supplement professional competencies of pedagogical and vocational employee concerning administration of pedagogical practice and vocation.

Continuing education is administered by the Ministry of education of the Slovak republic and other authorities, whose sphere of action include schools and educational facilities, which provide training and education. Continuing education includes:

- a) adaptative education
- b) updating education
- c) innovative education
- d) specialised education
- e) functional education
- f) qualifying education

Except adaptative, the continuing education is realised by means of accredited programs and it might be administered by attendance form, distance form or their combination.

In the next part of this work we will speak only about a pedagogical employee, a teacher at secondary school. For successful participation in an accredited program of a specific kind of continuing education its participant – pedagogical employee – acquires credits. A pedagogical employee can take part on a number of accredited programs, which are offered by educational institutions. If he/she acquires a certain amount of credits, the headmaster can evaluate this financially. On the other hand, acquired number of credits enables the employee to sign in and pass the first and second attestation. Only a pedagogical employee who acquired 30 credits can be accepted on preparatory education for attestation.

Contents of the first attestation is focused on ability to apply creative experience of pedagogical employees on solving problems concerning their subject specialization and didactics during practice, according to different categories and subcategories of pedagogical employees. When concerning education on vocational schools, on secondary schools we speak about a teacher of secondary vocational school, master of vocational education, teacher assistant, master of vocational education assistant.

Topics of the first attestation for teachers are mainly:

- a) aims of teaching process, curriculum, educational standards
- b) styles and methods of teaching process
- c) didactical rules, organisational forms of education, teaching tools, didactical technique
- d) evaluation of students

Contents of the second attestation is focused on ability to apply important innovations and creative experiences of pedagogical employees on solving problems concerning their subject specialization and didactics during practice, according to different categories and subcategories of pedagogical employees.

Topics of the second attestation for teachers are mainly:

- a) didactics, its objectives and research subject, system, aims of teaching process, curriculum, educational standards
- b) styles and methods of teaching process, didactical rules
- c) conceptions of teaching process, organisational forms of teaching process, teaching tools, didactical technique
- d) result evaluation of the teaching process
- e) quality of the teaching process

If a pedagogical employee acquires the first or the second attestation, the headmaster can evaluate this financially in such a way that he/she would be classified into a higher salary class. Nowadays the first qualifying exam equals the first attestation of a pedagogical employee.

One of the possible examples of an educational program could also be a program entitled *Use of Actuating Methods and New Conceptions in Teaching Vocational Subjects*. This program could be a part of innovative education. The aim of innovative education is to improve professional competencies for career degree, or career position. Its contents should include innovations in certification subjects, pedagogics and psychology, knowledge necessary for administration of activities concerning teaching, and that even in career positions.

Vocational and technical subjects dominate on secondary vocational schools. These help to form the profile of future graduates of different specialisations. This is the reason why requirements concerning teachers at vocational and technical schools keep rising. One of the priorities is that teachers at vocational schools should focus on developing students' creative and technical creative thinking. The teacher should plan, control and organise the teaching process in such a way that it would be interesting for students. He should also use modern teaching tools together with tools prepared on his own, information and communication technologies (ICT) and PC.

Inseparable part of teaching is using such actuating methods and teaching conceptions which support development of students' creativity. Clearly a creative teacher, who applies his creativity on the lessons with students, is the first necessity.

Teachers of vocational subjects tend to teach according to some patterns, statically and without enthusiasm, using only the traditional lesson conception. Instead of creating students' interest in the subject and their future careers, this approach causes that students often become passive consumers of specialised information from their teachers, which leads to loss of interest in their future careers.

Our effort is to change this situation as fast as possible because of the fact that we live in the third century, in an informational society, where the successful one is not the one who

is the first to receive the information, but it is the one who can process and use this information effectively.

One possibility is when the teacher of vocational subject implements elements of problematic teaching into the traditional teaching, or more precisely, uses only the conception of problematic or project teaching in a selected content of the curriculum. Teaching is administered with the use of PC and searches for other possibilities to motivate students on the lessons and also outside the class through organisational forms of teaching.

Handing over specialised information to students in an interesting and catching way, the teacher has to consider how to do this in accordance with the students' age. One of the possibilities is to transform content of the curriculum into the PowerPoint program. This program offers a wide range of opportunities to transform and present the content.

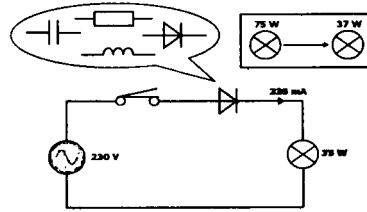
Teacher can take advantage of different patterns of the program, animations; the program even enables inserting a video sequence, different simulations also with the use of hypertext links. This requires the teacher to get familiar with theoretical basis to apply actuating methods and new teaching conceptions and also to acquire computer literacy.

The next part of this work offers an example adaptation of the topic of Rectifiers, which the subject called Basics of Electronics deals with during the second year of studies at the specialisation on the subject of mechanic electronics. Problematic situations for students are depicted in the presentation, which the students try to solve and they try to find the correct solutions in the given tasks. Using this kind of approach the teacher works on developing students' technical creative thinking, while the students employ knowledge acquired earlier in the given subject, respectively in the framework of inter-subject relations.

In the topic of Rectifiers the teacher focuses on understanding the fundamental factors and principles of the rectifiers, on understanding particular input and output processes and emphasizes the importance of different kinds of rectifiers in practice. Basic knowledge from the field of electronics gained earlier together with computer skills in simulation program is required from the students. While dealing with this topic the simulation program MultiSim is used.

Electronics Workbench – MultiSIM is an electronic laboratory on computer for analogue and digital analysis of a designed electrical circuit. It is an authentic simulator of combined circuits. It allows us to design a schematic wiring of a circuit, to which different measuring devices can be connected directly on the computer screen. It also enables carrying out measurements in particular circuit nodes and depicting the processes of the measured magnitudes in a graphic form.

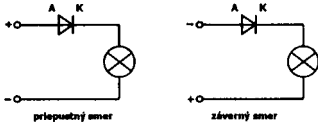
**TÉMA
USMERŇOVAČE**



Alkou súčiastkou je možné získať v izbe úsporné osvetlenie 75 W žiarovky, pri sieťovom elektrickom napätí 230 V ?

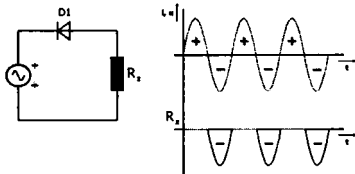
DIÓDA V OBVODE JEDNOSMERNÉHO ELEKTRICKÉHO NAPÄTIA

Nelineárna polovodičová súčiastka s jedným prechodom PN, ktorá v jednom smere prepúšťa elektrický prúd a v opačnom smere neprepúšťa sa nazýva dióda.

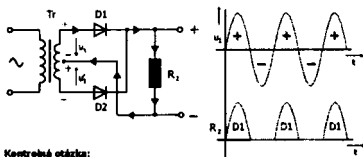


Charakterizujte kedy je dióda v priepustnom a kedy je zvärnom smere.

Analýzujte činnosť jednocestného usmerňovača v prípade opačného zapojenia diódy do obvodu a graficky znázorníte jeho výstupný priebeh činnosti.



Dvojcestný usmerňovač sa skladá z dvoch paralelne spojených jednocestných usmerňovačov, ktoré usmerňujú dve el. napätia navzájom fázovo posunutú o 180°, t.j. v protifáze.



Kontrolné otázky:
Je možné, aby pri kladných poltónoch sekundárneho el. napätia u₁ tekol elektrický prúd cez diódu D2?

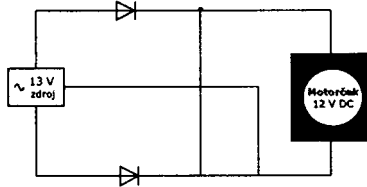
UKÁŽKA JEDNOCESTNÉHO USMERŇOVAČA V SIMULAČNOM PROGRAME



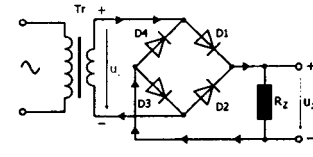
ZADANIE PRÍKLADU:

Jednocestný usmerňovač je pripojený na zdroj striedavého elektrického napätia s hodnotou 25 V. Vypočítajte maximálnu a strednú hodnotu usmerňeného el. napätia, ak úbytok napätia na dióde je 0,535 V. Vypočítané hodnoty porovnajte s hodnotami nameranými v simulačnom programe.

Pozoruje rýchlosť otáčania motorčeka



Mostíkový usmerňovač (Graetzov mostík) je typom dvojcestného usmerňovača, ktorý má oproti prechádzajúcejmu typu jednoduchý transformátor – s jedným sekundárnym vinutím.



Určte, ktorá z diód D2, D3 alebo D4 bude vodíť spolu s diódou D1 pri kladnej polovine sekundárneho el. napätia a vyznačte smer prúdu za diódou D1

Conclusion

To offer up-to-date information to the students in an interesting and catching way with the use of ICT (Information and Communication Technologies), teaching tools, actuating methods and modern conceptions, the teacher of vocational subjects has to be literate in the given fields. This literacy can be gained through continuing education. Through the correct choice

of educational program from the offered ones followed by successful graduation, the teacher not only gains credits for his career progress, but also new knowledge, skills and habits in the field of his vocational subject and didactics of vocational subjects. Through this the teacher acquires eligibility and competencies to teach on a required level when concerning his/her professional and technical skills, with the aim to impress the students and develop their creative and technical thinking and prepare him so for the labour market of his future career.

References

- Regulation no. 455/2009 of the Ministry of Education of the Slovak republic about continuing education, credits and attestations of pedagogical and vocational employees.
- Regulation no. 437/2009 Coll., of the Ministry of Education of the Slovak republic which establishes eligibility and special qualification requirements for each category of pedagogical and vocational employees.
- Nehila V., Návrh a využitie projektového vyučovania v predmete Základy elektroniky na SOU. (Scheme and Application of Project Teaching in Basics of Electronics a subject taught at vocational schools). Rigorous Thesis. Banská Bystrica: Faculty of Natural Sciences, Matej Bel University, 2009. 105 p.

Recenzent: Kazimierz Uździcki