

The educational portal „eLearn central”

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ABSTRACT

e-learning is becoming one of the most popular and progressive forms of education. This article shows authors' experience in design, realization and using of the educational portal for students „eLearn central” in the blended study. This e-learning project is accessible on the server of the Department of Microelectronics of Faculty of Electrical Engineering and Information Technology, Slovak University of Technology in Bratislava on the links <http://ec.elf.stuba.sk>. The „eLearn central” uses the learning environment MOODLE.

1. INTRODUCTION

Amount of information, which we need to absorb, is accumulating from day to day. The gap between the knowledge delivery and technology is growing. The specific feature of technical subjects teaching in Microelectronics education is the necessity of permanent innovation of subject matter. Textbooks become outdated very quickly and if we do not want to be out of date, we must find a way, which provides us to do it with minimum time and energy consumption. Internet can be of a great help – this is information source with a dominant position. Especially young people prefer this way of getting information to other sources.

The authors were inspired by the advantages of e-learning and made an alternative source of information and also workplaces for students' individual and team projects: the educational portal for students „eLearn central” to enhance the quality and effectiveness of the traditional teaching methods.

The „eLearn central” portal is located on the server of the Department of Microelectronics of Faculty of Electrical Engineering and Information Technology, Slovak University of Technology in Bratislava at the following link <http://ec.elf.stuba.sk>.

A. Learning Environment

The current version of this portal uses a course management system Moodle 1.8. Moodle (Modular Object-Oriented Dynamic Learning Environment) which is an open source software package designed using sound pedagogical principles, to help educators to create effective internet-based courses and web learning sites [1].

B. Courses categories

Nine groups of course: “Electronics”, “Electrotechnics”, „Management”, “Team projects 2006/2007”, “Team projects 2007/2008”, “Individual projects”, “Kaleidoscope of Information”, “Info about eLearn central” and “Course creating” were designed and located on the “eLearn central”. More than 70 courses are still being developed in these groups and more than 1230 users are registered there.

C. Access to the courses

Some of the courses are accessible to all the users; the other group is available to the users after filling out a simple registration form. The access to the rest of the courses is allowed only to registered users with special access rights.

These courses mainly serve for students at the Faculty of Electrical Engineering and Information Technology as an alternative source of information used in a blended form of study.

2. COURSES

We specify four basic types of our courses: a library of e-learning source, a standard self contained learning course, one-shot course – a fast course and a project.

A. The library of e-learning source

These courses are storage places of created e-learning material divided to modules. Each module is one defined topic. Our aim is to create library of modules from many topics. These modules are exploited by all type of courses allocated on the „eLearn central” portal. A free access course “Interactive flash animations” [2] with 32 interactive animations showing inner processes in semiconductors and electronics circuits is a part of it. All interactive animations have been developed in Adobe Flash software.

B. The standard self contained course

The standard self contained e-learning course making is very demanding and time consuming [3]. Our “eLearn Central team” is developing a course „Electronics devices and circuits” [4]. This course includes 10 lessons, 32 interactive animations, glossary with more than 300 terms and number of hypertext references (Figure 1).

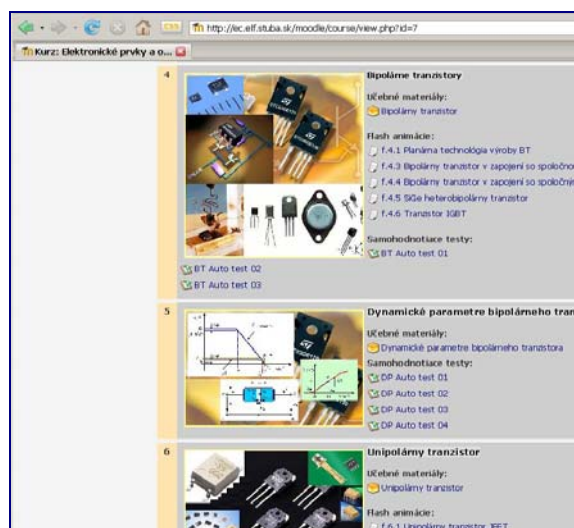


Figure 1 “Electronic devices and circuits”

A single lesson gives the basic principle definitions and terms connected with electronic devices and circuits to students in the second year of their Bachelor study at the Faculty of Electrical Engineering and Information Technology. These lessons were converted into SCORM packages (Shareable Content Object Reference Model). The lessons have been supplemented by two types of interactive self testing modules. The quizzes were created in the gift format for quizzes. This course mainly serves for our students in the second year of their Bachelor study as an

alternate source of information. Everyone who is interested in this topic can access the “Electronic devices and circuits” course. User needs to fill in only a simple registration form and he gets a full free access.

C. On-shot course – fast course

We have prepared many one-shot courses. For example „www guide for laboratory exercises practice of subjects Electronic devices” [5] is exploited as a support of practical laboratory exercises.

We regard these one-shot courses as fast courses, because: we can usually create this type of course in CMS Moodle for very short time, students and teachers used these courses notably for communication and adding information, transfer files and new quick information, it is very easy to do changes and these courses can be used only for one occasion or can be updated regularly.

This one e-learning course making creating is a very useful tool for teachers and students at standard and also a blended form of education in all cases (Figure 2).

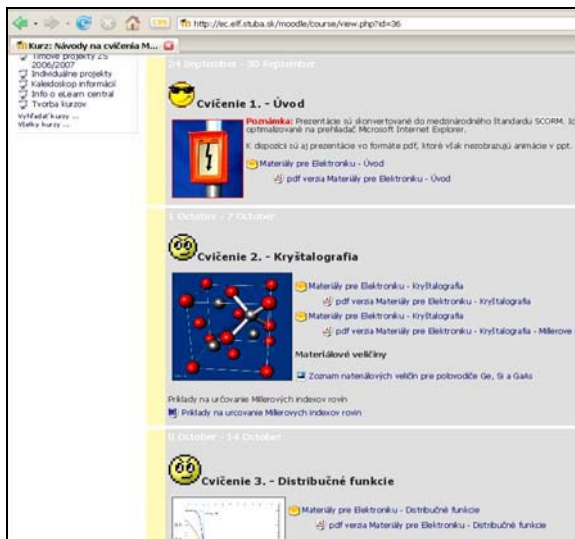


Figure 2 Course “Materials for Electronics”

D. Project course

The courses „Team Projects“ and “Individual projects” are a workspace for students in team projects and individual projects. These forms of study take advantage of all possibility of course management system MOODLE: a basic communication, a creative work by means of discussions, forums, resources adding, assessment studying materials, etc. (“Team projects 2007/2008” [6].). Students and teachers have the same roles – editing teachers.

Moodle is a very useful tool for determination in assessing a team project – the work is focused not just on the 'final product' (as in a report, essay and/or presentation) but also to factors of the process of achieving it. This might include the fact of how effective the team was in organizing, pursuing and converting the process into a recognizable 'output'.

Our students working in teams projects use the system Moodle not only as an effective communication tool between members of the student teams (without mail, SMS, team meetings), but also as a free source for all students team members and teachers of actual materials and preliminary versions of animations, test version of glossary, test of converting text of equations, etc.

3. CONCLUSION

The educational “eLearn central” portal and e-learning materials on this portal are a result of teachers and students collaboration from the “eLearn central team”. We achieved very attractive and original quality results [7] by reciprocal interactions between teachers and students based on equal rights.

Operation of the “eLearn central” portal started on December 16, 2004. The profile of our web page visitors corresponds mostly to the second year students of our faculty, who have no problems with access to Internet and have some experience with web learning and this kind of education suits them. The number of our site visitors dramatically rises before tests. The users also have the right to give an anonymous feedback to an individual interactive animations and courses. The feedback was very positive and it helped us to improve our work.

We extend our experience in using of our educational portal for students „eLearn central” in the standard and the blended form of education we enriched by a distance study last three years. Distance students feedback is clearly positive. The students used all accessible e-Learning materials.

The aim of “eLearn central” in future is to be a midpoint between students and technology. Lessons, animations, assets, quizzes, glossaries and other resources can be accessed by a few mouse clicks. Students do not need to browse the paper books - they simply search. It is hard to imagine complex semiconductor processes just through reading, it is better to imagine it through observing. Students do not need to be stressed before tests - they simply try passing then before the tests. They do not need to have another book explaining the technical terms - they simply click on a term to see its explanation. Students need a large amount of information, they need it in seconds and it does not matter if it is on a tram, in a cafe, at work, in a bed or elsewhere. “eLearn central” wishes to be like that.

4. ACKNOWLEDGMENT

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REFERENCES

- [1] Moodle, [online], cited 2008, < <http://moodle.org/>>
- [2] Interactive flash animation, [online], published 2006, cited 2008, < <http://ec.elf.stuba.sk/moodle/course/view.php?id=39>>.
- [3] M. Huba, K. Žáková, P. Bistak: WWW a vzdelavanie, Bratislava : FEI STU, 2003. 137 s. ISBN 80-227-1999-4
- [4] Electronics devices and circuits, [online], published 2006, cited 2008, < <http://ec.elf.stuba.sk/moodle/course/view.php?id=7>>
- [5] www guide for laboratory exercises practice of subjects Electronic devices, [online], published 2008, cited 2008, < <http://ec.elf.stuba.sk/moodle/course/view.php?id=135> >
- [6] Team projects 2007/2008, [online], published 2007, cited 2008, < <http://ec.elf.stuba.sk/moodle/course/view.php?id=84>>
- [7] Stuchlíková, E., Gron, M., Csabay, O., Helbich, M., Radobický, J., Beňo, J., Mondočko, P., Vacek, F., Hulényi, L., Kinder, R., Rovánová, L., Redhammer, R., Nemčok, P., Bednár, M. - Števo, M., Lazišťan, F., Benkovič, M., Švrček, P., Benko, M., Nagy, A.: Interactive www Course "Electric Devices and Circuits", In: Virtual University VU '06 : 7th International Conference, Bratislava, Slovak Republic, 14.-15.12.2006. - ISBN 80-227-2542-0. - S. 119-124