

KNOWLEDGE-BASE UAMT

Jan Valenta

Doctoral Degree Programme (2), FEEC BUT

E-mail: jan.valenta@phd.feec.vutbr.cz

Supervised by: Václav Jirsík

E-mail: jirsik@feec.vutbr.cz

ABSTRACT

This paper deals with options and usage of blended learning by the teaching at Dept. of Control and Instrumentation, FEEC, BUT. Net-technologies, audiovisual and computer technologies of distance education and their effect on teaching are introduced here. Knowledge-base UAMT and described principles and contribution for teaching are individually mentioned.

1. INTRODUCTION

The terms as „e-learning“, „blended learning“ and „LMS“ have been used very frequently in context with teaching recently. These terms are linked with the phenomenon of distance education. With the development of computer and information technologies the classical methods of teaching turn to blended learning with the usage of plentiful amount of methods of distance education. This phenomenon is not only growing in the academic world all around the world, but at the secondary school, with the languages teaching and big range in business as internal education too. The pathfinders of this type of education are companies IBM, CISCO, WebCT etc.

2. METHODS OF DISTANCE EDUCATION

Distance education (DiV) is a modern process of controlled education where the student and teachers (tutors) are not mainly in the same physical location [5]. That means, the tutorial has not lecture form. Multimedia, net-technologies, videos, audio records and interactive learning materials are often used. Thanks to these technologies the distance education and blended learning can be more effective than classic face-to-face form of teaching.

Blended learning combined the classic face-to-face lecture with on-line course. It uses often collaborative learning, web courses and e-learning.

2.1. PRINCIPLES OF DISTANCE EDUCATION

Distance education is based on these three basic elements:

- Study materials
- Study organization

- Evaluation and feedback

Good intersection and usage of these three elements lead to required quality and efficiency of teaching process.

2.2. ADVANTAGES OF BLENDED LEARNING AND DISTANCE EDUCATION

The main contribution of distance education and blended learning are more efficiency of teaching. Great efficiency is reached by combining variety of technologies as for example collaborative problem solving, interactive simulations, group work, feedback tools for study and learning materials etc. Other advantage which can be mentioned is time flexibility of study, which is come in useful mainly with student with different input knowledge. The students can appreciate choice of studying varieties, study materials accessibility and communications possibilities.

2.3. DISADVANTAGES OF BLENDED LEARNING AND DISTANCE EDUCATION

Disadvantage of distance education and blended learning is mainly transfer of responsibility for learning to students. It can lead to underestimate of study. Other disadvantages are work with unknown technologies (mainly by the very young and older generations) and time and cost consumption of courses creation.

2.4. TECHNOLOGIES

We can meet the following technologies in distance education and blended learning. The most used technologies in the list [3] are named. It can be used in any communication technology and systems for sharing and creation of information generally.

Audio

- Telephone
- Audio conferencing
- Radio broadcasts
- Two-way (shortwave) radio
- Recordings (analog or digital)

Visual / Video

- Slides
- Film
- Video recordings (analog and digital)
- Real-time video (one-way)
- Teleconferences (two –way)

Data/Computers

- Computer-assisted instruction (CAI)
- Computer-managed instruction (CMI)
- Computer-mediated education (CME)
- Electronic mail
- Real-time computer conferencing
- World-Wide Web

Print

- Textbooks
- Study guides
- Workbooks
- Course syllabi
- Journals and other printed media

3. KNOWLEDGE-BASE UAMT

Knowledge-base or encyclopedia at the Dept. of Control and Instrumentation (UAMT in short for next) was created as support of faculty e-learning program. It has been made for fast and simple searching of information by the work on exercises, homework, projects and bachelor's and master's theses. With own principles it does not replace learning texts but it can supply them suitably with headwords form and interactive links explaining given terms.

The knowledge-base will be created by students, therefore it will be very good understandable for them.



Figure 1: The main page of the UAMT Wiki

Encyclopedia is based on MediaWiki software. This is the same program which is used by well-known international encyclopedia Wikipedia. [www.wikipedia.org]. MediaWiki is free software under licence GNU GPL.

The whole system is linked to central database of students and tutors and it can be accessed either only after log in, or can be accessible for all (for external too), but the editing is possible only after log in. The registrations of students are ensured by registration in to the faculty student's database.

After log in to the knowledge-base anybody can add or modify the articles, which are not locked. Each article has history of changes with name of the author.

Rightness of data and articles in the encyclopedia is guaranteed by continuous control made by academic member. The principle of controlling is simple. The encyclopedia is administrated by encyclopedia administrator. He sends the list of changes or new articles in

knowledge-base to appropriate academic member in regular interval (e.g. one week). The “small” and “big” changes can be filtered in the system. The academic member will control the list of changes and give it back to administrator with information about correctness or request for deleting of the article. The administrator accepts the articles or returns the previous state (with one click).

The main page of this encyclopedia is introduced on figure 1.

The encyclopedia can substitute current Wiki module e-learning systems used on VUT with many of advantages. The Moodle Wiki module is based on ErfurtWiki. The comparison of both modules is on the figure 2.

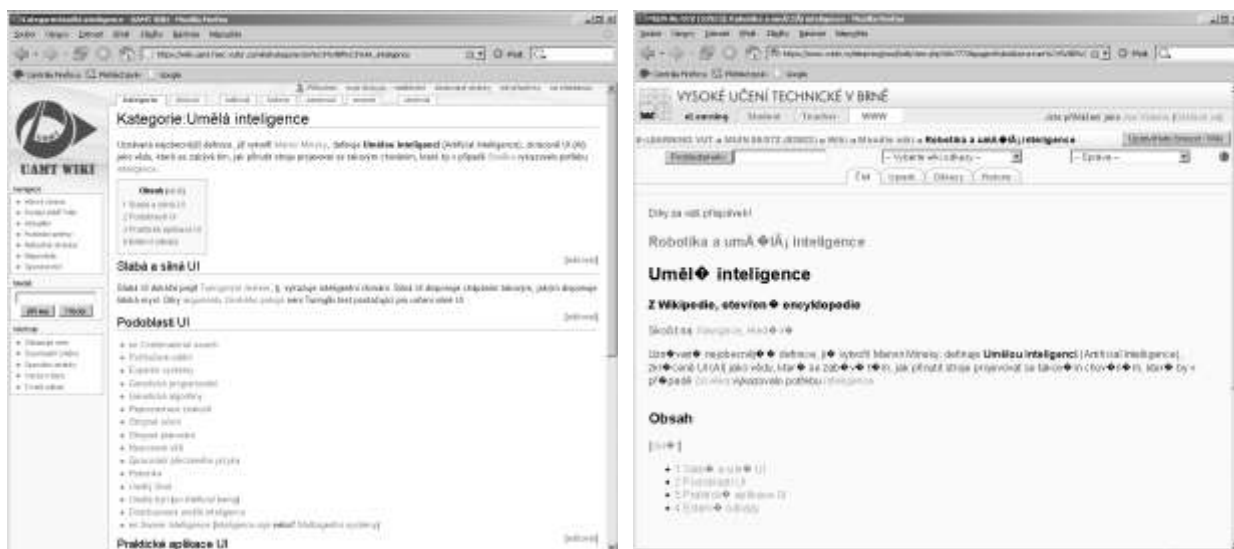


Figure 2: Comparison between UAMT Wiki (left) and Moodle Wiki (right)

The main asset of this encyclopedia is possibility to share with all the students and also among more departments. It needn't be bind to only one course. Important advantage is usage the same syntax of articles written with the free encyclopedia Wikipedia, which is often used by many students and academics. Substantial is very easy administration of the system too.

The whole system is built to best support e-learning tutorials at the UAMT. The example of use of this encyclopedia in e-learning system Moodle is on the figure 3.

The figure 3 shoves the environment of e-learning course in the system Moodle. In the each learning module, which is separated to weeks, can be shown the link to encyclopedia or it can be shown direct the link to concrete headword in encyclopedia. This links can be created with classical hypertext links or with parameters which are added to calling address. Shown headwords can be show in the existing window or in the new window.

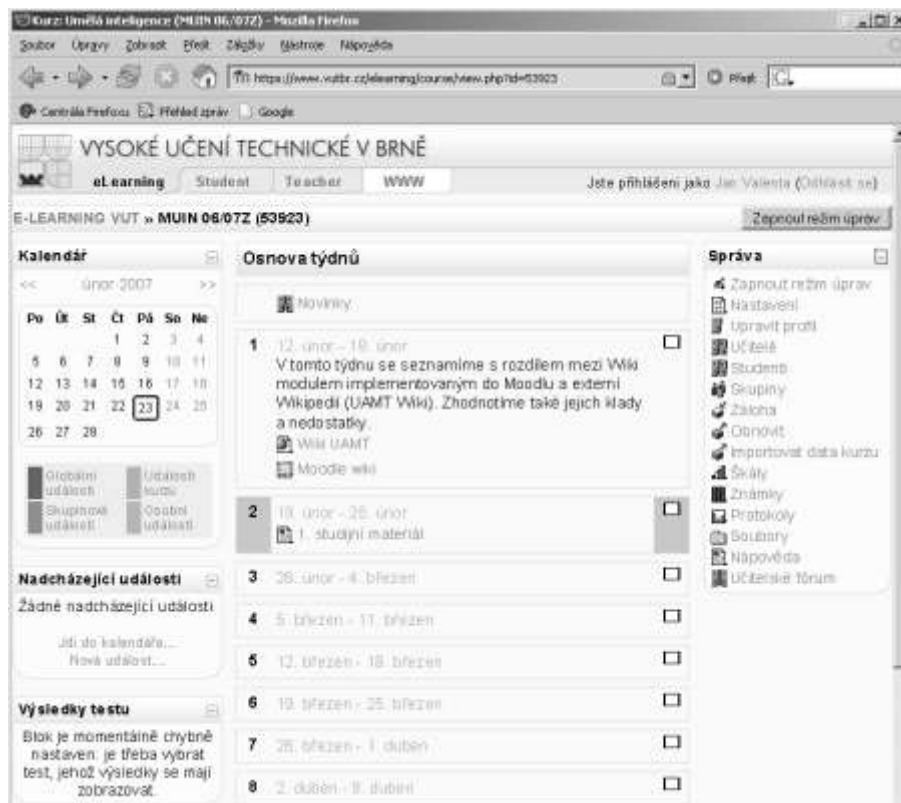


Figure 3: Usage of the UAMT Wiki in the e-learning system Moodle

4. CONCLUSION

To date, we can see an effort of set up e-learning courses in the teaching on the whole BUT. That is proved in many of trainings on the faculty or at the whole BUT. The paper is briefly introduced by software options used in distance education.

The new encyclopedia created at the UAMT of the FECC represents apposite universal instrument for better quality of teaching and brings an example of usage web-technologies in e-learning. That contributes many of advantages in to current Wiki module of the Moodle system.

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