DEVELOPMENT PROSPECTS OF E-LEARNING MODULES AT PORTAL OF UNIVERSITIES

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Abstract

The Portal of Universities (Portal of Slovak Universities, Universities Portal) is a gateway to information for applicants for study at universities, for students and employees of universities, as well as for the general public. The University Portal aims to provide visitors with systematically organized and professionally guaranteed university information so that data can be obtained from a single location in a short time; at the same time, the integration and interconnection of key systems related to universities, access to central databases and dials will be ensured. Slovak universities, through the Portal of Universities, provide their target groups, including the public, with information on universities, faculties and study programs.

The main research question is: How do students and tertiary staff get information about life-long education through e-learning methods?

The Universities Portal creators want to promote and simplify access to electronic educational courses, which is connected with the main objective: the creation and implementation of two new modules that will focus on e-learning courses and lifelong learning. The first proposed Universities Portal Module is called "Database of e-Learning Courses" (DEC). The second proposed module is called "Lifelong Learning" (LL).

Methodology approach of the research is based on the questionnaire survey about opinions of users of mentioned University Portal modules. Opinions of respondents from universities in Slovakia were evaluated by methods of analysis and synthesis, methods of descriptive statistics and graphic presentation tools. The survey indicated very important result that respondents have a positive attitude to education via methods of e-learning. Respondents expressed a demand for more electronic educational courses. They are also satisfied with information about events organized at universities. The views of university students and staff are important for the development and innovation of e-learning-based university studies and methods.

Keywords: Portal of Slovak Universities, e-learning, lifelong learning, study courses.

1 INTRODUCTION

Students and employees of universities in Slovakia obtain information about electronic courses and lifelong learning programs organized at universities in a complicated way, mainly from websites of particular universities and faculties. To unify the information and create an E-learning module on the Universities Portal succeeded as soon as the Universities Portal was created; however it was only the register of information as described in the current state.

1.1 E – Learning Module – current state

E-learning module on the Portal of Universities was created for the purpose of registration of university e-courses and e-objects. Visitor of this module will find information about courses in the following structure:
<table>
<thead>
<tr>
<th><strong>Table 1  Structure of course information</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Course name</td>
</tr>
<tr>
<td>University name</td>
</tr>
<tr>
<td>Faculty name</td>
</tr>
<tr>
<td>Author</td>
</tr>
<tr>
<td>Key words</td>
</tr>
<tr>
<td>URL</td>
</tr>
<tr>
<td>The area (choice from options: natural sciences, mathematical sciences, ...)</td>
</tr>
<tr>
<td>Category (choice from options: complete electronic textbook, e-course or e-object, stock of e-materials, predominantly testing, ...)</td>
</tr>
<tr>
<td>Languages (Slovak, English)</td>
</tr>
<tr>
<td>LMS</td>
</tr>
<tr>
<td>Target groups</td>
</tr>
</tbody>
</table>

The module is designed especially for university teachers to get an overview of which courses and to what extent are developed at Slovak universities, so that they can cooperate with authors of these courses to avoid unnecessary work - creating duplicate courses if a course has already been developed and it can be used in a study program or as an additional learning support. The module can also serve as a possible choice of course supervisors with already prepared teaching support. The module is also intended for students of all levels of study who can find further sources of study in this way, because courses, respectively objects is freely accessible, respectively they can be studied remotely.

2 METHODOLOGY

Module innovation has been decided in several forums, the questionnaire survey also played an important role in decision-making.

Technical background

- Existing Universities Portal Infrastructure at the Data Center
- Central backup security

Software solutions

- Possibility to use the virtual server on the Universities Portal (The Portal is part of the government cloud)
- Use of central databases (focus database, Central Register of Employees, ...)
- Interconnection with the current E-course evidence module
- SQL database
- Possibility to use common sector codebooks located on the Universities Portal

The structure of course information was discussed at various meetings and conferences, at meetings of members of the working group involved in the module design (Kremeňová-Gajdos (2017), Hostovecký-Novak (2017), Olahova (2016), Semelakova (2012)), but also in personal meetings of many others university colleagues.

Of the 88 respondents, 76 voted in favor of the module innovation, 10 respondents were indifferent towards the module innovation, 2 respondents did not know to comment on the module innovation.

The original idea was to implement 2 modules: 1. A database of e-learning courses with the possibility of publishing courses and 2. A module of Lifelong Learning, which would also not only provide...
evidence of learning opportunities, but also logging into individual learning activities. Based on a meeting at the Ministry of Education, Science, Research and Sports of the Slovak Republic, a proposal for a common module containing both submodules was adopted.

3 FURTHER DEVELOPMENT OF THE E-LEARNING MODULE

The further development of the E-learning module consists of a combination of 2 proposals: e-learning courses database and Lifelong learning.

3.1 E-Learning Courses Database

The e-learning courses database is supposed to be available via the Internet for e-learning support, while ensuring the continuous availability of courses and documents. In connection with the massive utilization of LMS MOODLE at Slovak schools (throughout all educational levels), it is primarily about working in this system.

The e-learning courses database module will publish:

- Ready-to-use courses with the opportunity to try them out on the spot.
- Courses or teaching materials that people interested can download and use in installation of LMS MOODLE in their school while retaining their original copyrights.
- Articles designed to promote e-learning.

At the same time e-learning courses database will serve as a repository with the aim of long-term retention of courses and other documents. The portal will be assigned an ISSN and will set out formal criteria and conditions for publishing courses, teaching materials and other documents. (Tóthová, Šemeláková, 2013).

The published courses and articles will go through the approval process by the editorial board (independent opponents - generating independent opponents from the database) and, after being recommended for publication on the portal, will be published under the assigned unique identifier DOI (Digital Object Identifier) and licensed by the author through Creative Commons public licenses. If the courses meet formal criteria, they will also be given an ISBN. The possibility of assigning ISBN as well as setting formal criteria will be defined as part of the module preparation.

The module realization proposal was based on:

- The necessity to publish e-courses for purpose of lifelong learning.
- Great interest of university teachers in publishing e-courses, which was presented at many conferences and seminars.

Methodical background

Experience of working group members with e-courses creation, methodical support for e-courses creation and evaluation of e-courses (2 members are long-time members of the jury in Hradec Králové E-learning competition).

Main goals and benefits of the E-Learning Courses Database module

Technical

1 Creation of space for accessing courses for professional and laic public (installation of LMS MOODLE, programming and graphic design of the system, programming of missing modules according to the working group’s proposals).

2 Design of SQL databases

- Database Focus (Source Portal of Universities)
- Database of reviewers (fields: name, surname, workplace, school, email, phone, focus1, focus2) - source Central Register of Employees.
- Courses database.

Methodical - to improve the quality of courses

1 Proposal of an editorial board that will approve the quality of entered courses. The editorial board will consist of independent opponents from several Slovak or Czech universities, which
will approve / moves to finish / refuse to publish the course based on the proposed course quality assessment form.

2 Design a form to write course metadata.

The project will address the issue of copyright as follows:

Courses published at e-learning courses database will be licensed through public licences type Creative Commons. This type of license allows user to download the entire material and, if necessary, further edit it or redistribute it. The licensing information will be provided for each published material. Creative Commons are public licenses that complement copyright law and make it possible for authors to publish works in such a way that the author has greater opportunities to decide how to treat his work. It may allow the work to be shared and continue to work with it, so that it is consistent with copyright law. It is example of so called open licenses that relate to all potential users of the work that the author may not know about at the time of publication. The author closes a contract with all who want to use his work and gives them some rights to the work, while other rights are reserved for himself. The project will also address the issue of long-term availability and identification of published documents through the DOI (Digital Object Identifier). The inclusion of e-learning courses that meet the required criteria in the publication activity registration system should be supported by ISBN allocation. The project will also address the definition of formal criteria for ISBN allocation.

The e-learning courses database will be built on LMS MOODLE. The published courses will be directly accessible and/or offered for download from the database (as archived course backups in LMS MOODLE, from which the course can be unpacked as learning objects). The published articles will also be available from the database and will be in PDF format.

Databases overview:

- Database of inserted courses assigned to be browsed (without the need to login to the portal), to test the course directly at the e-learning courses database (login required).
- Educational object database where records of courses will be offered for download at e-learning courses database. Each course will indicate which license governs the use of the course.
- Database of articles published on the portal. Thematic areas for entered articles will also be proposed.

Information about new articles and courses will be published on the e-learning courses database’s main page in the discussion forum. Search in the database will be user-friendly by setting appropriate filters. The Portal of e-learning courses will be part of the Portal of the Universities (export of course data from the e-learning courses database portal to the Portal of the Universities) and with another planned new module Lifelong learning.

3.2 Lifelong Learning

Goals:

- Develop a Lifelong learning module as part of a comprehensive Universities Portal to provide up-to-date information to the academic community and other users about lifelong learning training programs.
- Establish a database of accredited and non-accredited lifelong learning education programs in accordance with applicable laws and notices.
- Create methodical and advisory procedures for creators (applicants, providers), a "guide" in the creation of accredited and non-accredited lifelong learning education programs and their follow-up to existing resources.
- Provide to those interested in continuing education with a database of accredited and non-accredited lifelong learning education programs and help them to orient themselves in the offer of educational programs for educational institutions of further education.
- Work with existing "Lifelong learning" information channels.

(Hornyak Greganova, Tothova, 2015)

Basic starting points for the creation of the module Portal of the Universities - Lifelong Learning.
The module realization proposal was based on:

- Lifelong learning needs.
- Employee interest (mostly leaders of further education workplaces) dealing with lifelong learning at universities presented at various conferences, seminars and meetings, including questionnaire surveys.

The existing information channels are: National Institute of Lifelong Learning, Information System of Further Education, Section of Further Education and Youth of Ministry of Education, Science and Research of the Slovak Republic, Database of Accredited Education Programs.

Two basic categories of module users are defined, namely:
1. Creator, Provider, Applicant for Further Education
2. Applicant for Further Education.

Further education can be divided into:
- continuing vocational training
- retraining
- continual education
- spare-time education

Searching for activities will be possible by: title, focus, keywords, organizational form of education, institution, place of implementation.

<table>
<thead>
<tr>
<th>Table 2. Internal structure of educational programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>The name of the training program</td>
</tr>
<tr>
<td>Main goal</td>
</tr>
<tr>
<td>Scheme</td>
</tr>
<tr>
<td>Keywords</td>
</tr>
<tr>
<td>Expert guarantor</td>
</tr>
<tr>
<td>Organizational guarantor</td>
</tr>
<tr>
<td>The length of the training program</td>
</tr>
<tr>
<td>Qualification requirements</td>
</tr>
<tr>
<td>Termination method</td>
</tr>
</tbody>
</table>

The module will also be based on the requirements of universities institutions to apply for registration of participants for individual activities.

Working group will solve:
- what will be the record on the course, what format,
- what data to prepare, a sample, what data is still to be listed for each person in addition to the registration form for the course,
- exchange format presentation to be integrated with the academic information system,
- Considerations any other functionalities so that it is not just about entering data on educational programs and their display, but also other value-added services.

4 CONCLUSIONS

The Slovak Republic is trying to improve the quality of its services to the population, so it is also necessary to look for ways to improve the providing of further education by modern methods, to consider the integration of mixed reality into education, chatbots and other modern methods. The
research team of the Universities Portal is counting on these activities, not only in promoting study programs, but also in promoting further education. These activities include disclosure of information.

ACKNOWLEDGEMENTS

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REFERENCES


APPENDIX

Figure 1. Universities Portal Home Page (https://www.portalvs.sk/en/)
**Overview of courses**

Modul vytváranie sietí kon určenému elektronických e-kurzov a e-objektov.

Modul je súčasťou výukových elektronických e-kurzov a e-objektov.

<table>
<thead>
<tr>
<th>Course name</th>
<th>School</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tabeľkový kalkulačor (Tabeleký procesor)</td>
<td>UKF</td>
<td>Mgr. Martin Vozár, PhD.</td>
</tr>
<tr>
<td>Analytická lexíkografia</td>
<td>SPU</td>
<td>Karolína Veselá</td>
</tr>
<tr>
<td>Množica X1MKS</td>
<td>UKF</td>
<td>Martin Čápaj</td>
</tr>
<tr>
<td>Obrádenie stromov pri stavebních pôdorostoch</td>
<td>SPU</td>
<td>prof. Ing. Viera Pugosová, PhD.</td>
</tr>
<tr>
<td>Základy linuového inovácie a zohľadnenia pracovníka</td>
<td>unuamed</td>
<td>Mgr. Ľadislav Szirma</td>
</tr>
<tr>
<td>Obecného združenia vo rozvoji miestna</td>
<td>SPU</td>
<td>Zuzana Polkova</td>
</tr>
<tr>
<td>Úhradzové študium</td>
<td>UKF</td>
<td>Martin Štefka</td>
</tr>
<tr>
<td>Programovanie 1 – Delší</td>
<td>UKF</td>
<td>Martin Čápaj, Viera Poláňová, Jiří Skalka</td>
</tr>
<tr>
<td>Výhramní aktivity v MŠ/ŠS</td>
<td>UMB</td>
<td>Lenka Lipová, Renata Pondělická</td>
</tr>
<tr>
<td>Pohybová sestra</td>
<td>UKF</td>
<td>Peter Švec, Marek Uralba, Milan Turčaní</td>
</tr>
</tbody>
</table>