

INTEGRATION OF ACADEMIC LIBRARIES' E-SERVICES INTO LEARNING MANAGEMENT SYSTEM: STUDENTS' PERCEPTION

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Abstract:

Libraries should consider the ways of developing their services around users' workplace in order to reach their users and offer the most appropriate services according to the notion - libraries are where users need them. In academic institutions the storage of libraries' resources is not enough and libraries must project them into users' learning environment. In recent academic libraries' theory and practice very important trend is spreading their virtual presence through the integration into learning management systems (LMS). Following these points the main goal of this paper is to explore effects of integration of libraries' e-services into learning management system at the university from the students' point of view. The focus of the research is on the students' perception of new learning environment because both libraries and LMS exist to improve students' learning. Research results revealed mostly positive students' attitudes toward inclusion of e-service in LMS. Furthermore, one of positive results of such integration is empowerment of relationships between students, teachers and librarians. The research results support the findings from literature which stress the importance of academic librarians' cooperation with academic teachers because teachers have a key of subject contents within learning management systems and both should jointly work on developing of students' information literacy skills.

Keywords: learning management system, teachers, students, academic libraries, information literacy.

1. INTRODUCTION

Several years ago Dempsey pointed out that libraries should consider ways of developing of their services around users' workplace because today we cannot expect from users to come to library even we cannot expect from users to visit libraries' web sites (Dempsey, 2006). Furthermore, Dempsey also accentuated that storage of libraries' resources would not be enough namely libraries must project them into users' learning environment (Dempsey, 2006). E-learning goes more and more toward automated processes of learning and teaching enabled by software called LMS - Learning Management System (Govindasamy, 2002). Learning management system is designed as focus of educational activities and their management together with content and resources which makes these activities possible (Pina, 2007). History of learning management systems dates from 1996 when Internet development enabled teachers to manage their learning resources in virtual environment. One of the most popular learning management systems often used within Croatian universities is Moodle¹. Namely, Moodle is open source tool and it supports educational environment of social constructivism. Some of important possibilities of Moodle are: possibility of creation great amount of courses at one place; course planning - activities' schedules, calendar etc.; management of users, users' roles and groups of users inside course; working with existing files and educational resources; users' testing and grading; tracking users' activities; offers many tools for communication and collaboration among users; has system management-backup copies, statistics, logs and detailed system for help (Bosnić, 2006). In recent time academic libraries have become interested into exploring possible directions of integration of existing libraries' systems, sources and services into universities' learning management systems as basic of e-learning. Namely, among other trends in academic libraries in the world in 2010 Association of College and Research Libraries (ACRL, 2010) pointed out importance of spreading libraries' virtual presence through integration into learning management systems, social networks, development of online tutorials and interactive web pages. Although libraries' e-services are crucial in learning management systems, usually they are totally absent in these systems. The possible reason of absence of libraries' e-services from learning management system lies in the fact that digital libraries were primarily designed as repositories, similar but independent from LMS (Pina, 2007). However, integration of libraries' e-services into learning management systems is important for libraries strategies (McLean et al., 2003). Furthermore, same experts pointed out reasons of integration of libraries' e-services into learning management systems: reduced costs, empowering relationships between teachers, librarians and students who started to ignore libraries satisfying their information needs directly on web. Students' information needs can be categorized as following: define and explore topic, select and evaluate, recognize information sources and how to find them, prevention of plagiarism, citing sources, understand nature of scientific research and scientific communication, recognize key journals and sources in field, identification of key authors in field, conduct detailed literature review, conduct case studies and know how and where to publish (Whitehead & Quinlan, 2002). Focus of students' learning environment at universities mostly takes place within learning management system and it would be easier for students to satisfy their information needs where information needs usually happen namely within learning management system. That's why the main goal of this paper is to explore effects of integration of libraries' e-services into learning management system. Academic libraries have important role in teaching information literacy. According to the American Library Association information literacy is a set of abilities requiring from individuals to recognize when information is needed and have the ability to locate, evaluate, and use effectively the

¹ Moodle - Modular Object - Oriented Dynamic Learning Environment.

needed information. Information literacy is perceived as a set of learning skills because information literate person knows how information are organized and is capable to use them and turn them to a new knowledge. Information literacy in today's information society helps in reducing information overload. Online learning environment has changed and ways of teaching information literacy have to be changed. Namely, teaching information literacy should happen within subject content integrated into curriculum (Špiranec & Banek, 2008). Furthermore, construction of activities which encourage development of information literacy skills within different learning contexts, for example within learning management systems, is strongly recommended. Ragains pointed out that academic librarians should cooperate with academic teachers because teachers have a key of subject contents within learning management systems (Ragains, 2008).

2. RESEARCH

The users of university learning management systems are students and teachers. This paper is focused on the students because every LMS is primarily created because of students' learning needs. The goal of the research conducted at two faculties of the University Josip Juraj Strossmayer in Osijek, Croatia, was to explore students' perception of the convergence of academic libraries' e-services and universities' learning management systems. Therefore the research questions were:

- How students perceive possible benefits of integration of libraries' e-services into online courses within LMS Moodle?;
- How students perceive the impact of integration of libraries' e-services into online courses within LMS Moodle on their particular learning activities?; and
- How students perceive possible effects of integration of libraries' e-services into online courses within LMS Moodle regarding the role of academic library in the university curriculum?

Research of the convergence of academic libraries' e-services and learning management systems was conducted during period of winter semester of 2011/2012 academic year. For the purpose of the research six online courses were selected from the learning management system Moodle at the Faculty of Economy in Osijek, while two online courses were selected from Moodle at the Faculty of Philosophy in Osijek. Online courses of Faculty of Economy were: Statistics (first year of undergraduate study), Financial management (third year of undergraduate study), Financial management 2 (first year of graduate study), Business simulations (first year of graduate study), Business intelligence systems (second year of graduate study) and Business finance (second year of undergraduate study). Online courses at the Faculty of Philosophy were: General translational exercises 1 (first year of undergraduate study) and Databases 1 (second year of undergraduate study). At the beginning of research set of academic libraries' e-services in form of HTML block was integrated into selected online courses within LMS Moodle at both faculties. That set of academic libraries' e-services consisted of links to selected scientific databases (chosen according to the primary scientific field of particular university): Academic Search Complete, Business Source Complete, Scopus, Current Contents, Econlit, Web of Science, Emerald and DOAJ-Directory of Open Access Journals; link to the web site of faculty library; to online catalog of faculty library; online tutorial about information literacy and RSS feed managed by librarians. Table 1 shows number of students per online courses encompassed within research of integration of libraries' e-services into LMS. Total number of students encompassed within this research was 904 students.

Table 1: Number of students per online course

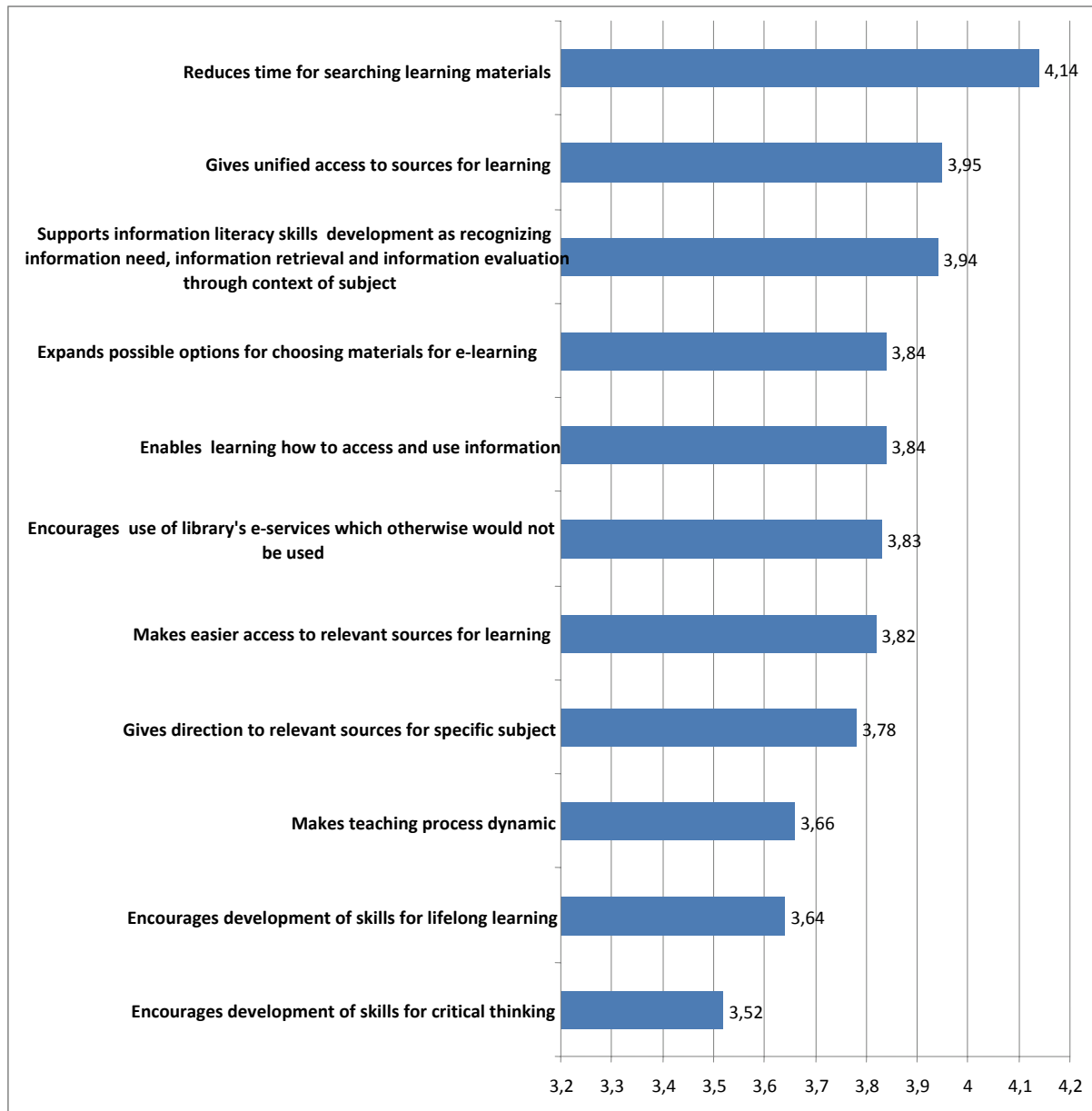
Online courses	Number of students per online course
General translational exercises 1	4
Statistics	400
Databases 1	28
Financial management	231
Financial management 2	49
Business simulations	20
Business intelligence systems	37
Business finance	135
Total	904

In purpose of exploring students' attitudes toward integration of libraries' e-services into LMS the online survey was developed in program called Limesurvey. The online survey was distributed at the end of winter semester in three iterations to students' electronic mails through alerting system of learning management system Moodle. Students' online survey consisted of ten questions. First four questions were dealing with demographic characteristics of students like age, gender, name of faculty, year of study etc. Other six questions were created in form of Likert scales where students should express their attitudes toward given statements regarding integration of libraries' e-services into learning management system. Total of 120 students completed online survey, 80 (66.7 %) of female students and 40 (33.3 %) of male students.

3. RESEARCH RESULTS AND DISCUSSION

Research results revealed mostly positive students' attitudes toward integration of libraries' e-services into learning management system. Namely, students highly graded following general effects of integration of libraries' e-services into learning management system which are shown on Picture 1: reduces time for searching learning materials (4.14), gives unified access to sources for learning (3.95), supports information literacy skills development as recognizing information need, information retrieval and information evaluation through the context of subject (3.94), enables learning how to access and use information (3.84), expands possible options for choosing materials for e-learning (3.84), encourages use of library's e-services which otherwise would not be used (3.83), makes easier access to relevant sources for learning (3.82), gives direction to relevant sources for specific subject (3.78), makes teaching process dynamic (3.66), encourages development of skills for lifelong learning (3.64) and encourages development of skills for critical thinking (3.52). It should be mentioned that in brackets next to the effect of integration of libraries' e-services into learning management systems is a mean.

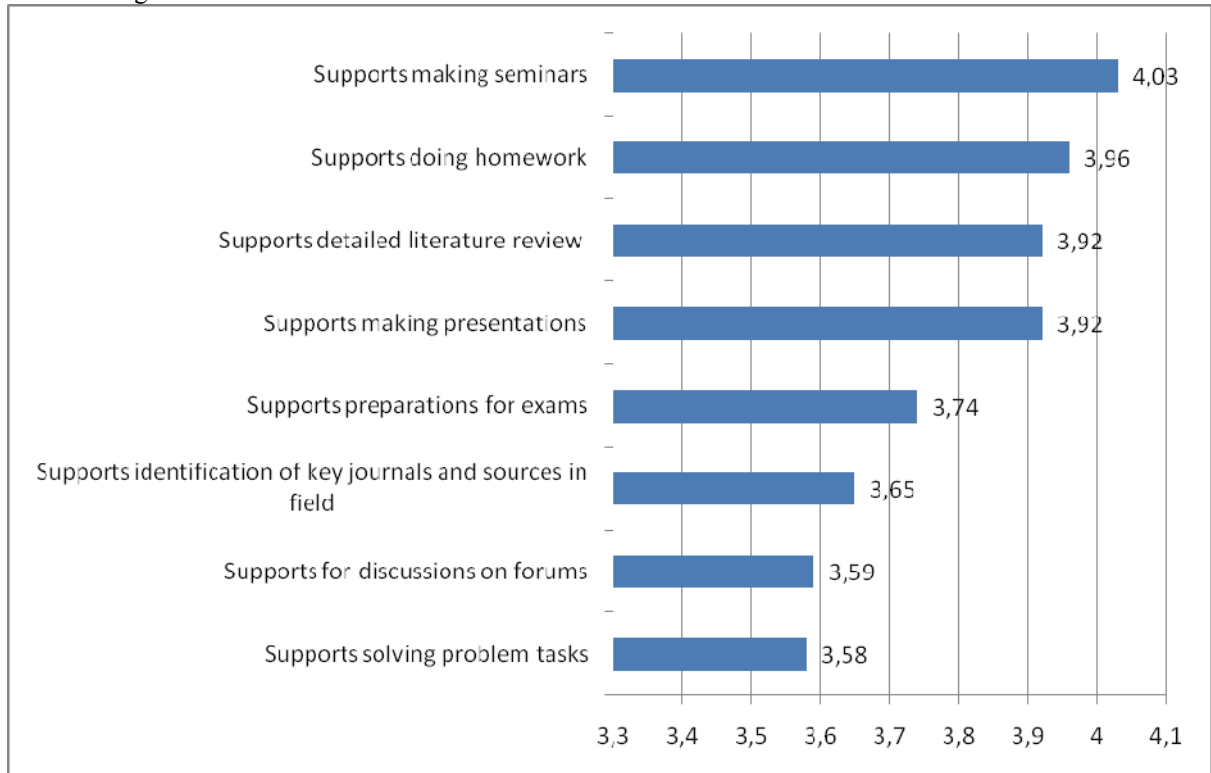
Picture 1: Benefits of integration of libraries' e-services into online courses within learning management system Moodle



Integration of libraries' e-services into learning management system had positive effect on accomplishment of different students' learning tasks given by their teachers. As the major benefits of integration of libraries' e-services into online courses within LMS Moodle students saw reducing time for searching of learning materials, unified access to the learning materials and the information literacy skills' development. Such results support the notion that library should be present where they users are because the library provides relevant services when needed and makes learning environment more convenient.

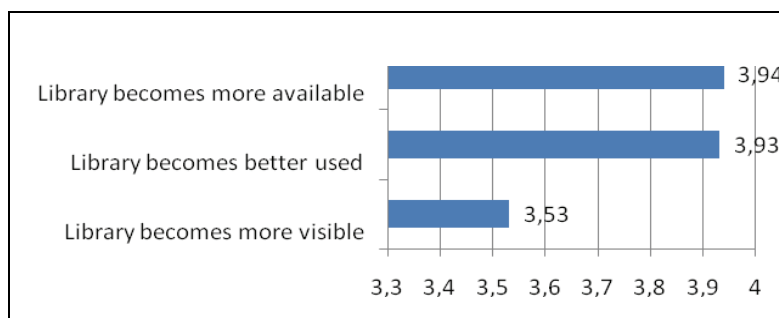
Picture 2 shows various learning activities supported by the integration of libraries' e-services into LMS: making seminars (4.03), doing homework (3.96), making presentations (3.92), detailed literature review (3.92), preparations for exams (3.74), identification of key journals and sources in field (3.65), discussions on forums (3.59), solving problem tasks (3.58) and identification of key authors in field (3.56).

Picture 2: Effects of integration of libraries' e-services into online courses within LMS Moodle with regard to students' learning activities



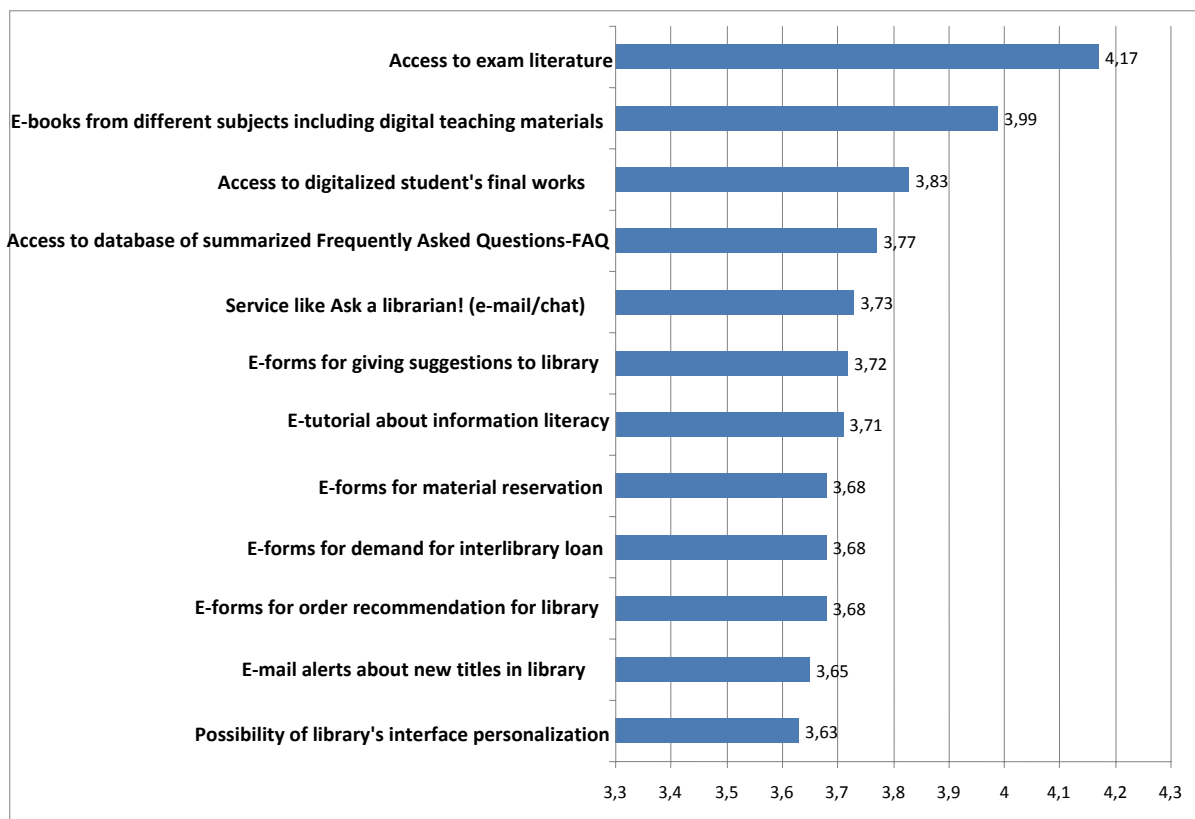
Students' perception of the role of academic library within learning management system was that academic library has become more available (3.94), better used (3.93) and more visible (3.53), which can be seen on Picture 3. The results have shown that, integration of libraries' e-services into the learning management system reduces marginalization of libraries and promotes their' e-services. Furthermore, it is visible that students see concrete role of the library in their learning activities which are a part of the university curriculum. Libraries e-services help them in completing their courses' tasks. Probably the similar students' posture could be found if asking them about the academic libraries' role in general. Therefore additional research should be conducted to investigate if there are any differences between perceptions of libraries e-services accessed directly from the library website and those e-services which are offered within LMS and concrete course. Obviously, the availability of the library is the major point, as it could be seen from the Picture 3. Students strongly connect the availability of the library and its usage – the effects of the integration of libraries' e-services into online courses are primarily seen in library better availability and better usage.

Picture 3: Effects of integration of libraries' e-services into online courses within LMS Moodle with regard to the role of academic library in educational process at university



Besides the set of libraries' e-services which were offered to students within the particular courses in LMS in this research, students were asked what did they think about some other libraries' services to be integrated into online courses. Students think that it would be useful to assure following libraries' e-services within LMS: access to exam literature (4.17), e-books from different subjects including digital teaching materials (3.99), access to the repository of digitalized student's final works (3.83), access to knowledge database based on summarized Frequently Asked Questions-FAQ (3.77), service like Ask a librarian! (e-mail/chat) (3.73), e-forms for giving suggestions to library (3.72), e-tutorial about information literacy (3.71), e-forms for order recommendation for library (3.68), e-forms for demand for interlibrary loan (3.68), e-forms for material reservation (3.68), e-mail alerts about new titles in library (3.65) and possibility of library's interface personalization (3.63). The results are shown in Picture 4.

Picture 4: Desirability of other libraries' e-services within learning management system at university



The results have shown that students expect from the library a wide range of e-services, just those which position an academic library as a central for a virtual university development. This is especially true of the development of repository of learning and teaching materials and objects and the database of students' works. The reason for slightly lower mean scores than in previous results could be in the fact that the offer of these e-services is hypothetical – the students did not experience such services in the LMS. As a significant part of the university teaching and learning process, the academic library should cooperate with academic teachers because it is them who have a key of subject contents within LMS (Ragains, 2008). Such cooperation is a way for empowerment of relationships between students, teachers and librarians. LMS in which teachers and librarians work together creates a new learning landscape for students, enriched by the contribution of both. The students' learning area becomes wider and deeper, because it enables using of information resources within course

contents and context, thus building information literacy skills which lead to acquiring of sustainable learning to learn skills.

4. CONCLUSION

Following trends in academic libraries show the importance of spreading libraries' virtual presence through integration into learning management systems. The main goal of this paper was to explore effects of integration of libraries' e-services into learning management system Moodle from the students' point of view. Research results revealed mostly positive students' attitudes toward integration of libraries' e-services into learning management system. Students highly graded general effects of integration of libraries' e-services into LMS such as reduced time for searching learning materials, given unified access to sources for learning etc. Also, integration of libraries' e-services into LMS had positive effect on accomplishment of different students' learning tasks given by their teachers. Students' perception toward the role of academic library within learning management system was that the role of the library within educational process at university was empowered in a way that its' e-services became more available, better used and more visible. Furthermore, students think that it would be useful to assure other libraries' e-services within learning management system specially pointing out access to exam literature and repositories. The general positive result of integration of libraries' e-services into learning management system could be seen in empowerment of relationships between students, teachers and librarians because e-services in LMS create new and enriched learning landscape. Through cooperation of academic librarians and teachers such environment enables to students acquiring of information literacy skills in the context which is the best way of developing learning to learn lifelong skills.

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