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INTEGRATION OF VIRTUAL LEARNING ENVIRONMENT INTO THE EDUCATIONAL PROCESS

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Abstract

Virtual learning environment can have an important role in the learning and teaching process. But its implementation into the educational process depends on teachers' knowledge about technology and ways how to integrate it into educational process. In this paper the results of higher education teachers' satisfaction with the VLE Merlin and its support are presented. VLE Merlin is set of learning platforms for higher education in Croatia which is maintained by the E-learning Centre at SRCE.

Introduction

Today, technology is more than a tool; it underlines and influences most of the activities in our lives: the way we learn, work, communicate with others, search for information, spend our free time etc. We are faced with a growing use of ICT in education, especially in higher education; however there are a lot of questions and issues that are still open and essential to dealing with e-learning effectiveness. One of the most important prerequisites is to provide continuing and sustainable support to teachers. Teachers often face obstacles when planning to use ICT and e-learning technologies in their teaching. They are not sure which specific technology to use, how to use it and they often lack the time to learn how to use it as they are already overloaded with their regular duties (Bates, 2000). In order to ensure successful e-learning and e-teaching, institutions should provide solid e-infrastructure and support to teachers and students. Perhaps the most basic e-learning requirement is an adequate technical infrastructure to deliver e-learning courses. The course management systems and virtual learning environments which are easy to use have encouraged the adoption of e-learning. Teachers want technology that is easy to use so that they can focus on their subject matters. And besides that, they want immediate help and answers when they face obstacles.

Virtual Learning Environment (VLE)

E-learning systems have an important place in the modern educational process. They are an integral part of teaching and e-learning programmes. Their integration into the traditional environment can strive to minimise boundaries of the educational process, making it more flexible, enabling the acquirement of new skills and competencies, but the process of creating a better educational scenario also requires adjustment, reorganisation and investment. The

WhatIs.com defines virtual learning environment as a set of teaching and learning tools designed to enhance student's learning experience by including computers and Internet in the learning process. The Wikipedia offers a similar definition of VLE, defining it as a web-based platform for the digital aspects of courses of study, usually within educational institutions. To define VLE, JISC (2008) uses the term Learning Management System (LMS) which needs to be designed to act as a focus for students' learning activities and their management and facilitation, along with the provision of content and resources required to help make learning activities successful. All of these definitions state that VLE is designed for e-learning. In most universities the VLE is a part of the 'blended learning' experience where students still have face to face lessons but increasingly which are increasingly augmented with online activities and tasks using a VLE. In their study, Pasto and Quirós (2015) state that the new generation of LMS allows interaction with other systems to understand the context in which the learning process occurs. They are also based on open and modular frameworks that allow integration with third party products, thus creating an evolving environment.

At the University of Zagreb, University Computing Centre VLE is defined as an integral environment, consisting of series of systems and tools (including Learning Management System and a variety of social software e.g. forum, chat, wiki, blog etc.), usually connected with administrative information system and digital libraries. In such an environment teachers and students communicate, cooperate and jointly follow the progress of the educational process and supplement the possibilities of the traditional learning in classroom.

VLE Merlin

One of the first goals of the E-learning Centre at the University Computing Centre University of Zagreb SRCE was to establish and provide the university with an e-learning platform and e-learning technologies. The e-learning platform, today VLE, is continuously maintained, upgraded and built on. The VLE Merlin (http://merlin.srce.hr) is available to the academic community in Croatia and consists of a learning management system based on Moodle, an e-portfolio system based on Mahara and a system for webinars based on Adobe Connect (Figure 1). The VLE is connected to the Information System of Higher Education Institutions in Croatia as well. Today, Merlin provides a sustainable and easily accessible virtual environment for over 28,000 students, 2,100 teachers and 40 higher education institutions in Croatia. There are more than 5,000 e-courses in the academic year 2015/2016 and more than 8,000 archived e-courses from the previous five academic years.

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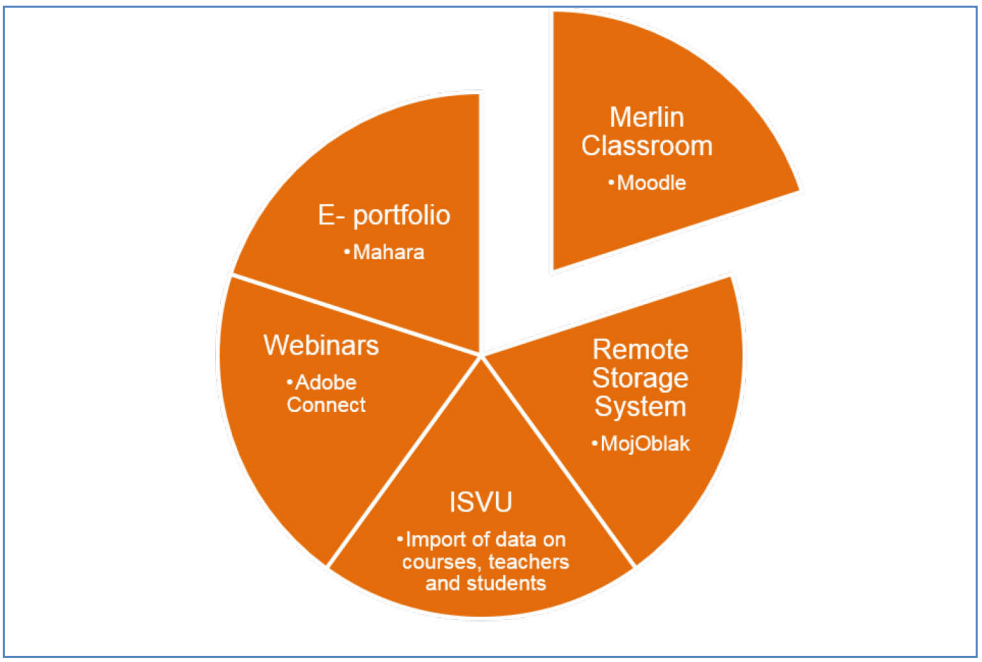


Figure 1. Virtual learning environment Merlin

Support to teachers provided by the E-learning Centre at SRCE

Organized and sustainable support to users is very important in use of new technologies. The E-learning Centre at SRCE was established in 2007 as the focal point for systematic adoption and support for e-learning at the University of Zagreb. Creating a positive attitude towards e-learning, raising awareness of e-learning within the academic community and providing necessary support to users are long term tasks of the E-learning Centre. Constant, sustainable and quality support to teachers and students is one of the priorities of the E-learning Centre. The Centre tries to provide all levels of support the users might need, from helpdesk, consultations, tutoring and training teachers to use technology and develop e-learning materials and e-courses. Special focus is placed on work with teachers on their e-courses development and improvement. Teachers often have numerous ideas but do not know how to realize them with technology in order to improve the learning process. Also, quite often, they lack the time to get familiar with technology and seek quick help in order to create an activity. For that reason the E-learning Centre offers individual consultations to teachers and carries out various e-course development projects. Besides the manuals, online and face to face training courses on how to use components of the VLE (Moodle, e-portfolio, webinars) are also available, as well as courses on the instructional design of e-courses. All user materials are regularly updated and are in accordance with the current stable version of the software. Also, for the users, the Centre made the Moodle demo system available and adapted to its Croatian users and Moodle testing system is offered as a playground for teachers, in order to practice e-course development and administration. The Centre also encourages local support teams to be set at University's departments and gladly cooperates with them. Today, the E-learning Centre does not only provide support to teachers and students at the University of Zagreb but to teachers and students at other universities and educational institutions in Croatia as well, and it is the only such centre in Croatia.

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Research and results

User feedback is very important, therefore the E-learning Centre continuously takes steps to collect and reflect on it. In this paper we will reflect on data gained from a recent survey on teachers' satisfaction with the VLE Merlin. The survey was designed as an online survey and an announcement with the link to the survey was placed on the main page of the VLE Merlin. The participation in the survey was voluntary. The survey was available from 2nd till 20th of November 2015 and participants were teachers and students who are using the VLE Merlin. Only the feedback from teachers will be analysed in this paper. The role of the teacher at the VLE Merlin is assigned to the full professors, associate professors, assistant professors and teaching assistants. As an additional support to the results of this recent study, the results of a similar study conducted in 2013 (Kučina Softić, 2014) as well as experience with everyday work with teachers will be used in order to interpret the findings and make conclusions.

Seventy nine (79.0%) teachers have participated in this survey. 54.4% of teachers were female teachers, 36.7% of teachers were older than 40, 44.3% of teachers said that they use VLE Merlin more than three years and 43% of them use VLE Merlin less than three years. Only 12.7% of teachers started to use Merlin this academic year (2015/2016).

Results of this research revealed that 64.5% of teachers have established their e-courses on their own initiative while 29.1% of them said that it was their institution's decision. The rest of the participants have indicated that the decision was made as a result of both factors (personal and institutional) or they had some other reasons.

Based on the received replies (Figure 2), teachers use the VLE primarily for storing course content and the distribution of learning materials (94.9%) so that students can access them from anywhere, anytime. In addition, materials are easy to update so teachers can provide students with the most current versions and new materials. The second most important reason is distribution of course information and course schedule (87.8%). This is particularly important to teachers as messages posted on the message board (forums) as announcements are received by students immediately via e-mail. Teachers see the benefits of ICT and e-learning in facilitating better communication with and among students, and have ranked this factor the third most important (67.1%). Online communication can be asynchronous or synchronous. E-mails or message boards can be used for asynchronous online communication while chats, instant messaging or webinars can be used for synchronous communication. A number of teachers find message boards to be quite useful in answering students' questions, continuing discussions started in the classroom or enhancing student-teacher interaction. But there are also examples where students did not see any advantage of using them and failed to participate. A smaller number of teachers use technology for assessment (46.8%), grading and giving feedback to students on their progress in the course (39.2%) and only a few (25.3%) use it for collaboration/group work. These results are identical to the ones gained in the survey that have been conducted in 2013 (Kučina Softić, 2014).

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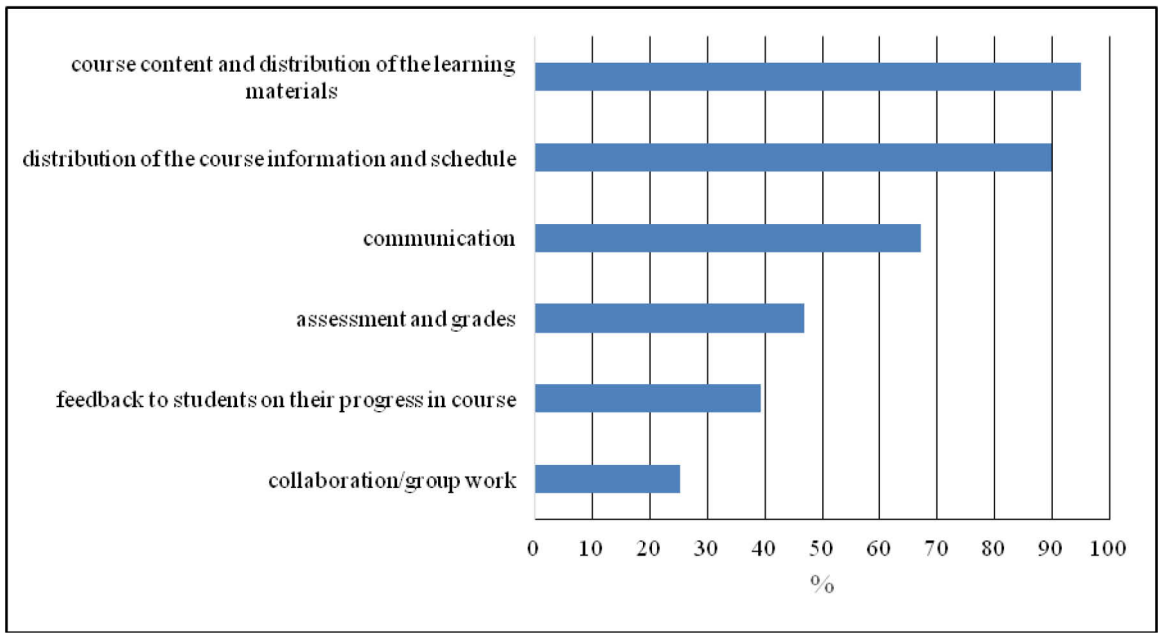


Figure 2. Bar chart showing responses to survey question:
For what part of teaching do you use ICT and e-learning technologies?, survey 2015

The survey results showed that 70.9% of teachers are satisfied with VLE Merlin functionalities, 16.5% of them are not satisfied and 12.7% cannot determine (Figure 3). The results also showed that 79.7% of teachers agree that the use of VLE Merlin contributes to the improvement of course quality, whereas 11.4% cannot evaluate the truthfulness of this statement and 8.9% do not agree with it. Furthermore, results showed that 74.7% of teachers think that the use of VLE Merlin on a wider level at their institution would significantly contribute to the quality of the educational process they deliver.

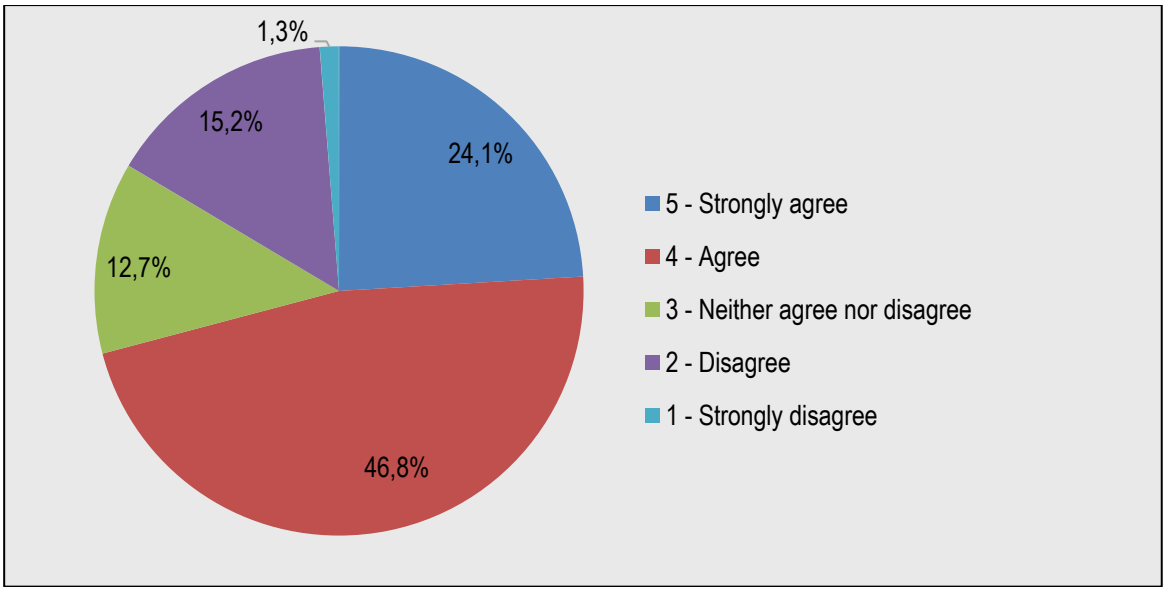


Figure 3. Pie chart showing responses to survey statement:
I am satisfied with the functionalities of VLE Merlin., survey 2015.

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Teachers stated that available and sustainable support is the most important factor that would encourage them to use e-learning. This is also supported by answers to questions concerning the importance of support in e-learning application. Teachers rated all types of support in using new technologies and their integration into the teaching and learning process to be of highest importance. Teachers stated that the most important type of support to them is support in the use of ICT.

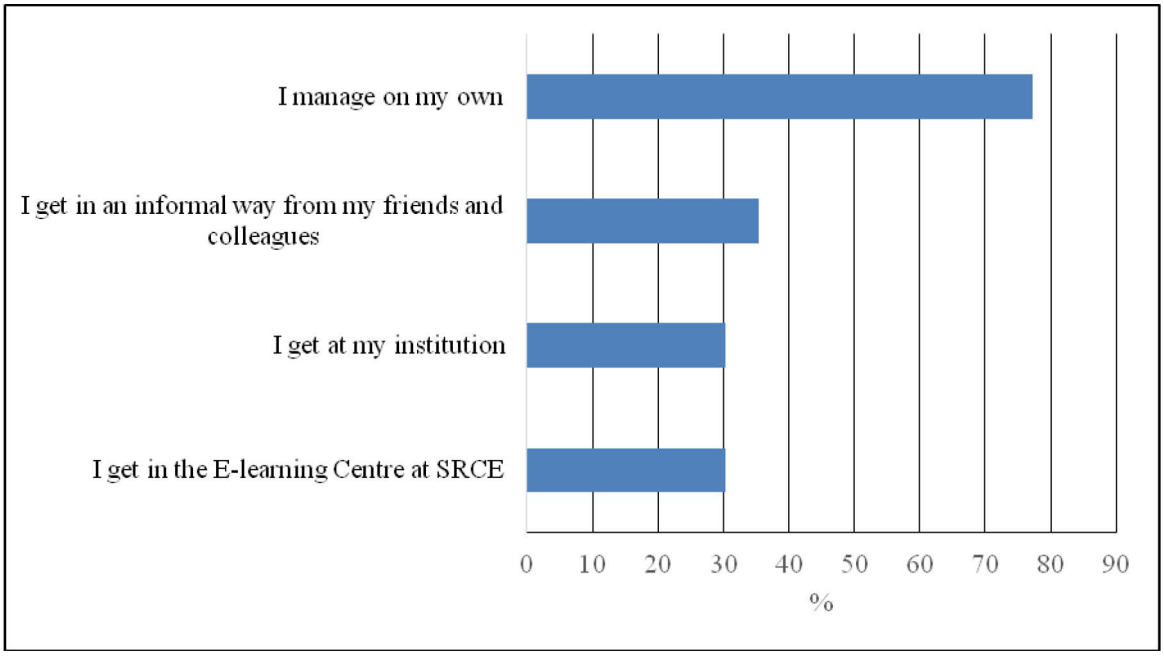


Figure 4. Bar chart showing responses to survey question:
Where do you get technical support in the production of e-learning materials?, survey 2015

Technical support for producing e-learning materials is very important to teachers but the majority of them manage on their own (77.2%) (Figure 4). This can be interpreted in two ways: that teachers are autonomous and rely on their own knowledge and efforts, or that they feel that they have no other option but to be self-reliant. A number of teachers rely on help from friends and colleagues (35.4%) and the same number of teachers (30.4%) uses support available at their institution and the E-learning Centre. The survey results from 2013 (Kučina Softić, 2014) show similar results, i.e., the majority of teachers manage on their own, whereas on the second place was the support from their institution, followed by the support from their friends and colleagues and on the last place was the support from the E-learning Centre at SRCE. The lack of adequate technical support is considered one of the most relevant factors affecting the effective introduction of technological resources in the educational environment (Pastor & Quirós, 2015). The survey results revealed that teachers who have used the available support from the E-learning Centre at SRCE consider it sufficient. However, the findings presented above indicate that more effort should be put in disseminating information about the E-learning Centre and availability of support services (helpdesk, manuals, online courses, individual consultations etc.) for teachers and students. Majority of teachers (91.1%) intend to continue to use the VLE Merlin. Smaller number of teachers (1.3%) stated that they will not continue to use the VLE Merlin. Some of the sated reasons were lack of the time and the

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support at their institution. Therefore, institution management should be more aware of the importance of providing technical support to teachers in the use of ICT and e-learning technologies in order to improve the quality of their e-learning. Lastly, the survey results showed that 91.1% of teachers intend to continue to use the VLE Merlin.

Conclusion

The European Union has been emphasising the role of the ICT and e-learning in education for over a decade. In their documents, European Commission that ICT and e-learning are key tools for modernisation and improvement of the educational process and it is important to ensure that teacher are aware of their potential and to support them in curricula, teaching guidelines and teacher training states (Staff Working Document: The use of ICT to support innovation and lifelong learning for all- A report on progress, 2008; The Rethinking Educational Strategy 2012; European Education and training cooperation: new priorities, 2015). That is why the implementation of ICT and e-learning should be a part of a strategic decision to change and improve the way universities work and produce education (Bates & Pool, 2003). One of the key factors in successful implementation of e-learning is good infrastructure and sustainable support to teachers. This support should make the use of ICT easy, allowing teachers to concentrate on educational and pedagogical goals.

The aim of the E-learning Centre at SRCE is to create a positive and useful environment for teachers to help them successfully integrate the technology into educational process. Teachers should be properly trained not only in technology but in methodologies and abilities to integrate technology into educational process as well. Lack of teachers' confidence in their technological skills leads to use of technology only to prepare course materials without fostering new ways of teaching and learning.

This research confirms that there are factors that influence teachers' attitudes towards ICT and e-learning and their implementation in the educational process. If the teachers are not aware of the technological possibilities and the way how it can be integrated into educational process, the use of technology does not innovate the learning and teaching process. The majority of teachers use e-learning as an extension of their classroom courses, to provide course content online and distribute learning materials, course information and schedule, as well as to communicate with students. They are more likely to adopt new technologies if they see that technology offers them a better way to do their work and achieve goals. When it comes to the production of e-learning materials, teachers generally rely on themselves, their colleagues and friends and sometimes they also use the technical support available at their institution or at the E-learning Centre at SRCE. Available and sustainable support and infrastructure is of great importance to teachers who are using e-learning and can be a motivator for experimenting with e-learning technologies.

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