# Teacher's Technology Use and Attitude Towards E-learning in Higher Education

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# TEACHER'S TECHNOLOGY USE AND ATTITUDE TOWARDS E-LEARNING IN HIGHER EDUCATION

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## Abstract

Today, teachers are confronted with two big challenges: with the need to learn about new technologies and how to integrate them into the teaching and learning process, and with the need to change course design from content-oriented to active and engaging learning settings. This is not an easy process as teachers are faced with technologies with which the most of them are not familiar. Numerous studies have been dealing with teachers' problems in accepting new technologies, focusing mainly on the how to use technology and only lately on its integration into the teaching and learning process. Studies show that successful implementation of educational technologies depends largely on the attitudes of educators and that their attitude is a major enabling/disabling factor in the adoption of technology (Albirini, 2006; Mahdizadeh et al. 2008; Al-Zaidiyeen et al. 2010; Krishnakumar & Rajesh Kumar, 2011; Babić, 2012).

The research examined, from the perspective of teachers at the University of Zagreb, their attitude towards ICT and e-learning in higher education. The research found that teachers have a positive attitude towards e-learning. Permanent and reliable organized support and promotion of e-learning has contributed to this attitude. Teachers find that ICT and e-learning enable education adjusted to meet the needs of today's students, collaborative learning, better achievement of learning outcomes and knowledge management. A small number of them think that ICT and e-learning merely represent more work for teachers, that they underestimate teachers' role in the education process and that they have no impact on teaching and learning. This confirms that teachers' attitude towards technology influences their perception of the usefulness of technology and how it can be integrated into teaching.

## Introduction

The use of ICT to support innovation and lifelong learning for all – A report on progress (EC, 2008), emphasizes that the challenge is to nurture new and innovative learning approaches, to ensure that teachers are aware of their potential and to support them in curricula, teaching guidelines, and teacher training. The Rethinking Education Strategy (EC, 2012) points out that the use of ICT and open educational resources should be scaled-up in all learning contexts and that teachers need to update their own skills by regularly attending trainings. The Report to the European Commission on New modes of learning and teaching in higher

education (EC, 2014) states that the integration of digital technologies and pedagogies should form an integral element of higher education institutions' strategies for teaching and learning and all teaching staff should receive training in relevant digital technologies and pedagogies.

Teachers' attitude towards ICT and computers can greatly influence their adoption and integration of these technologies into their teaching (Albirini, 2006; Al-Zaidiyeen et al., 2010; Buabeng-Andoh, 2012). It cannot be expected that teachers will automatically accept that they need to change their teaching methodology and embrace technology as they have to first understand why technology should be used in teaching and how it can be used to make teaching better.

Among the most important factors in the implementation of e-learning are training and support for the teachers. The institution needs to support teachers, ensure that there is a positive environment and encouragement, organize various types of training, provide the infrastructure and transparently value teachers' efforts and work invested in teaching. In such an environment, teachers will have a more positive attitude towards new teaching methods.

## Teacher's Attitude towards e-learning

There have already been some studies on teachers' attitudes towards the ICT and e-learning implementation process in education. Studies show that successful implementation of educational technologies depends largely on the attitudes of educators and that their attitude is a major enabling/disabling factor in the adoption of technology (Albirini, 2006; Mahdizadeh et al., 2008; Al-Zaidiyeen et al., 2010; Krishnakumar & Rajesh Kumar, 2011; Babić, 2012).

In his paper, Buabeng-Andoh (2012) identified personal, institutional and technological factors that influence teachers' adoption and integration of ICT into teaching. Apart from age, gender, educational level and educational experience, personal factors also include ICT competence, experience with ICT for educational purposes and teachers' attitude towards ICT and e-learning.

### *Support and training*

The lack of support and training in new pedagogical methods and technologies can particularly affect teachers who do not feel at ease with computers.

The review of literature shows that teachers' attitudes have been studied more from the technical aspect than from the pedagogical (Mahdizadeh et al., 2008). Teachers who don't see ICT as a potentially relevant teaching tool in their teaching practice are less likely to accept and adapt to technology use. As Cox et al. (1999) stated, if teachers don't see clear and coherent reasons for educational change, what it means and how to proceed, there will be a lot of resistance, confusion and rejection. If they lack necessary information and training they are more likely to have a less positive attitudes towards ICT and e-learning in the educational process, and will assume that it will merely bring them more work (Oldfield, 2010; Krishnakumar & Rajesh Kumar, 2011). Learning to use ICT and e-learning technologies is not


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enough. Training in the pedagogical and methodological practice should be provided as well (Oldfield, 2010). Teachers have to learn how to revise their pedagogical practice, how to replace traditional lessons and how to incorporate new education models that place students in the centre of the learning process. Based on this, it can be concluded that teachers' skills and competences are necessary for the adoption of e-learning, especially ICT competence and pedagogical competence. Many teachers fear losing control in the classroom as students gather information about the subject matter from the internet, have better ICT skills than teachers and no longer view teachers as the main and sole experts. Teachers might feel insecure in such situations, and tend to maintain dominance in the classroom by holding onto the existing teaching practice which they find works well and makes them feel comfortable. On the other hand, students can also be the force that drives teachers to start using new technologies in teaching by demanding a better interaction with teachers, accessible and available learning materials and creative ways of teaching.

## Study case – The University of Zagreb

The University of Zagreb is the traditional university and the oldest one in Croatia. The University has about 65,000 students and is a large and diversified institution, with 33 faculties that encompass all fields of human knowledge. At the University of Zagreb, some e-learning technologies had been available and used since 1990s, but mostly as individual activities of some teachers or as a technological possibility/necessity at a few faculties. However, the process of systematic implementation of e-learning at the University of Zagreb started in 2007 with the adoption of the E-learning Strategy (University of Zagreb, 2007). The same year, the E-learning Centre at the University of Zagreb University Computing Centre SRCE was established as the focal point for systematic adoption and support to e-learning across the University. One of the first steps of the E-learning Centre was to ensure the constant, sustainable and quality support to teachers and students. The Centre also established and provides the university e-learning platform and e-learning technologies. Today it is the Virtual Learning Environment called Merlin consisting of an e-learning system, a system for webinars, an e-portfolio system and connected with information system of higher education institutions in Croatia. Creating a positive environment, raising awareness of e-learning within the academic community and providing necessary support to users are long term tasks of the E-learning Centre. The E-learning Centre tries to ensure all levels of support the users might need from discussions, consultations, tutoring and trainings in use of technology and in development of learning materials and e-courses. The Centre encourages also the setting of the local support teams at faculties and cooperates with them.

Today the E-learning Centre provides support not only 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

The research data was collected in 2013 through an on-line survey in which teachers from the University of Zagreb participated on voluntary basis. Four hundred and five (405) participants responded to the invitation to participate in the survey.

Teachers were asked whether there is the e-learning component in any of the courses they teach. The majority of participants (83.0%) replied that the courses they teach include an e-learning component.

Seventeen percent of teachers participating in survey said their courses don't include the e-learning component. As the main reason for that they listed lack of time (47.8%), irrelevance of e-learning to their teaching/subject area and the fact that time and effort invested in e-learning are not valued in their teaching or promotion requirements. Only a small number of teachers (4.3%) said that it is because they don't like technology.

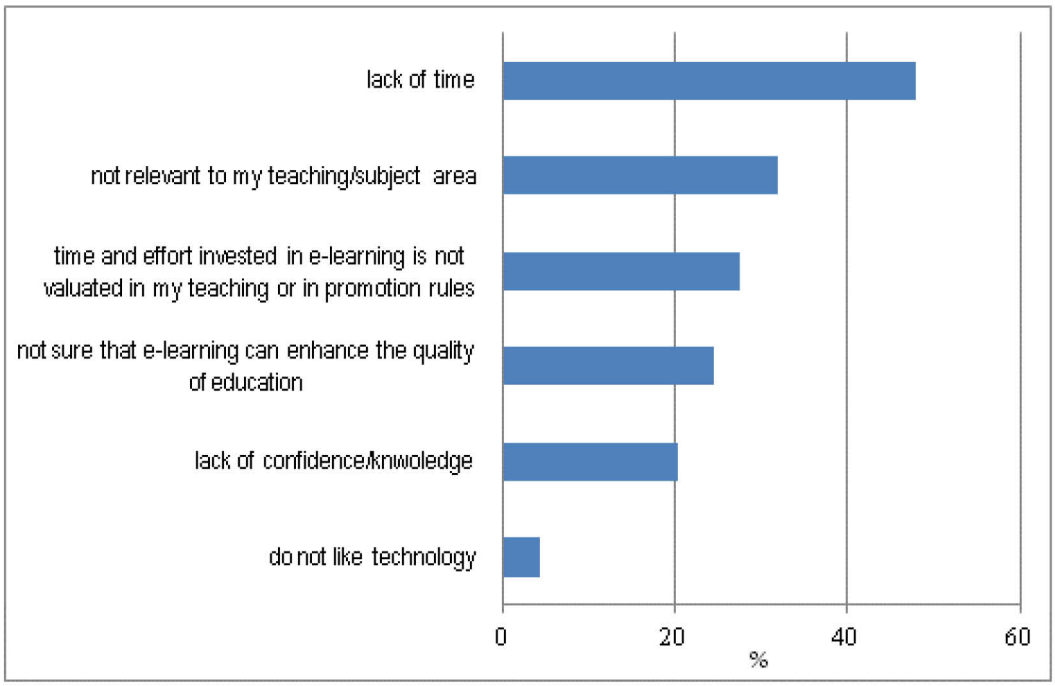


Figure 1. Bar chart showing responses to survey question: "What are your reasons for not using e-learning in your courses?"

The same questions were included in a survey conducted at the University College London-UCL (Voce, 2007). In this survey, as the main reason for not using e-learning, teachers stated that they were unsure of possibilities offered by e-learning, that they don't have time and that e-learning is not relevant to their teaching/subject area. It can be seen that the same answers are present in both surveys. These answers confirm that teachers are preoccupied with their work and that they need training on how to integrate new technologies into their teaching in order to recognize the possibilities new technology can bring.


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Teacher's workload is found to be one of the biggest barriers to using new technologies and new methods in teaching (Bates & Poole, 2003; Buabeng-Andoh, 2012). They are already struggling with an overcrowded curriculum, course maintenance, and number of students, while serving as mentors and conducting their own research. Implementing e-learning technologies in the educational process requires significant additional work and time and it should be made part of strategic plans on an institutional level. If this is not done, universities need to be aware that quantity can overpower the quality of teachers' work, which will lead to their poor attitude turning into indifference. Teachers can be enthusiastic and volunteer for some time but if their goodwill and hard work are not recognized and rewarded to some extent, their enthusiasm is not going to last.

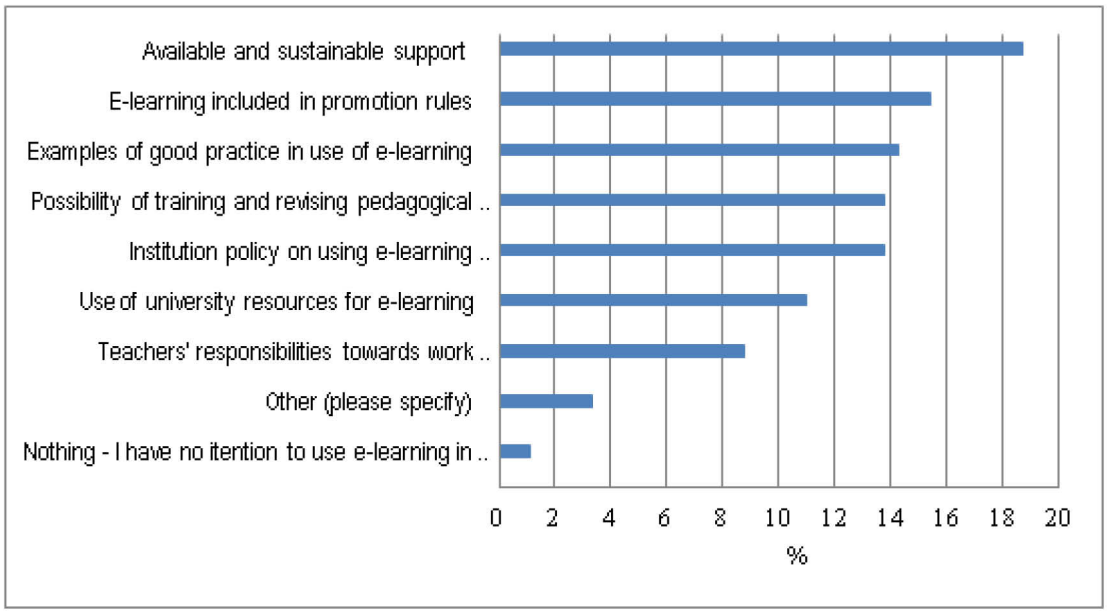


Figure 2. Bar chart showing responses to survey question: "What might encourage you to use e-learning in the future?"

Half of the teachers participating in the survey whose courses don't have the e-learning component said that they would consider using e-learning in the future. To the majority of them the most important factors that would encourage them to use e-learning are:

- available and sustainable support,
- e-learning included in promotion requirements,
- examples of good practice in using e-learning,
- opportunity for training and revising pedagogical practice,
- institutional policy on using e-learning (Figure 2).

Answering the same question in the UCL survey, participants stated that the main factors that would encourage them to use e-learning are:

- more information about e-learning and facilities available,
- more promotion of e-learning,
- good training and support,
- examples of how e-learning is being used,


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- incentives and reward for using e-learning,
- more time to investigate and use e-learning (Voce, 2007).

Comparing these answers it can be seen that in both surveys teachers listed the same factors that would encourage them to use e-learning: training and support, examples of good practice and promotion requirements/incentives for using e-learning. Promotion requirements for teachers should be improved, enabling teachers to get promoted in the teaching field as well as in the research field (Bates & Poole, 2003).

Teachers who said their courses have the e-learning component mostly use e-learning as an extension of their classroom courses (65%), or as a blended form of learning (33%), while only 2% teach fully online courses.

In the answer to question: "What impact do you think e-learning has on teaching and learning?" teachers stated that ICT and e-learning:

- enable education adjusted to meet the needs of today's students,
- collaborative learning,
- better achievement of learning outcomes and knowledge management,
- enable access to the online learning materials.

These responses were also reflected in their comments concerning the advantages of e-learning application in the teaching and learning process:

> *"Better communication, continuous student activity," Senior Assistant, Faculty of Teacher Education*
>
> *"Time and space independence, better and easier communication, active student participation and interaction," Assistant Professor, Faculty of Science*
>
> *"Better communication with students, easier to hold exams, material and financial savings and environmental friendliness," Senior Assistant, Faculty of Electrical Engineering and Computing*
>
> *"New possibilities in the teaching process, new ways to boost student interest, greater availability of learning materials and better control over the teaching and learning process," Assistant Professor, Faculty of Mechanical Engineering and Naval Architecture*
>
> *"Availability of learning materials, motivation for teachers to improve their learning materials, once prepared materials can be easily modified," Associate Professor, Faculty of Science*
>
> *"Enables education adjusted to meet the needs of students, enables collaborative learning, encourages students' active participation in the course," Research Assistant, Faculty of Science*


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> *"Flexibility of learning in time and space, interesting and dynamic learning, availability of learning material," Assistant, Faculty of Kinesiology*

> *"Easier communication, better student motivation, improved learning outcomes," Full Professor, Faculty of Political Science*

Nevertheless, around 15% of teachers stated that e-learning only means more work for teachers, some think that it underestimates the teacher's role in the educational process and a few of them think that e-learning has no impact on teaching and learning.

## Conclusion

Teachers' attitude has been discussed in many studies and singled out as the most dominating factor for implementing ICT and e-learning into the educational process. It is important to create conditions that will not make teachers feel endangered, that will motivate them to continuously work on "good learning" and in which teachers will receive proper recognition for their work.

Teachers who responded to the survey generally have a positive attitude about ICT and e-learning but not all of them believe that ICT and e-learning can play an important role in improving the quality of the educational process. Teachers often face obstacles when thinking about using ICT and e-learning technologies in their teaching. They don't know which form of technology to use or how to use it and they don't have time to learn as they are already overloaded with work. It is inevitable that all this will impact their acceptance of ICT and e-learning technologies in education.

In this research it has been confirmed that there are factors that influence teachers' attitudes towards ICT and e-learning and their implementation in the educational process. 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. Teachers want available and sustainable support. They need training on new teaching methods, on the pedagogical aspect of integrating new technologies into the teaching and learning process, they want examples of good practice and observation. They need recognition of their effort and clear and transparent rules. Enthusiasm is not enough. They can give their best only if they are assured that changes will makes teaching better and more interesting and make students more motivated, so that they feel good about it.


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