

TEACHERS' DIGITAL COMPETENCE FOR TEACHING IN CONTEMPORARY LEARNING ENVIRONMENTS

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TEACHERS' NEED...

teachers at all levels should be digitally competent so that they can live and work in an increasingly digital world where they are required

They express growing need

- for better knowledge about integrating ICT into education
- for access to professional learning that will enable them to better integrate ICT into education
- for newer models of teacher professional development where teachers are learning from peers

TEACHERS' PROFESSIONAL DIGITAL COMPETENCIES

To understand the digital world and society, its development, how it influences and changes premises for teaching and learning, to be able to creatively use the possibilities that lie within it, but at the same time know how cope with the challenges. Moreover, to equip students with the skills, competencies and bildung they need to be digitally aware and able to safely, actively and creatively take part in this society.

Ilka Nagel, Ostfold University College, Norway, March 2020



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Timisoara, March 6, 2020

EUROPEAN COMMISSION, 2018: DIGITAL EDUCATION ACTION PLAN (I)

- Innovation in education systems, understood as the adoption of new services, technologies, competences by education organisations, can help to improve learning outcomes, enhance equity and improve efficiency.
- Innovations will be most effective and sustainable when embraced by well-trained teachers and embedded in clear teaching goals
- Priorities:
 - Making better use of digital technology for teaching and learning
 - Developing digital competences and skills
 - Improving education through better data analysis and foresight
 - 11 actions

EUROPEAN COMMISSION 2019: FORUM ON FUTURE OF LEARNING (I)

- 6 thematic blocs:
 - **Demographic challenges**
 - **Inclusion and citizenship**
 - **Technological change and the future of work**
 - **Digitalisation of society**
 - **Environmental challenges**
 - **Investment, reforms and governance**
- Lifelong learning is becoming a central element in people's lives, and digital learning is already making this more accessible, flexible and cheaper in many cases.
- Role of teacher is a key in digitalisation of education and training

EUROPEAN COMMISSION 2019: FORUM ON FUTURE OF LEARNING (2)

- Digital learning means going beyond simply transferring existing learning material into a digital format
- Initial teacher education and continuing professional development is equally important and should be a central element of all strategies to adapt digital skills and competences
- Educators should receive training that addresses digital skills, new methodologies and new learning options
- The impact of digitalisation on educational provision will be the cause of significant change over the coming decade. Online and blended learning is likely to become widespread and this will have an impact on the role of teachers and the educational environment

EDUCATION AND TRAINING MONITOR 2019

Presented at Second European Education Summit 'Teachers first: excellence and prestige for the European Education Area'

- Teachers are main focus of this monitor and they are considered as the factor having the strongest impact on students' learning within the school environment.
- Teachers training necessary in use and implementation of ICT in education
- In Europe, 16% of teachers report a further need for training on the use of information and communication technology (ICT) for teaching; 13% report a need for training in teaching in multilingual and multicultural environments; 21% need more training in teaching students with special needs
- 92% of teachers participate in professional development
- To successfully undergo digital transformation, schools need to support teachers' digital competence for pedagogical use, design innovative pedagogical approaches, and provide digital equipment as well as better connectivity. ICT in education mandatory part in initial teacher training



NEW DIGITAL ACTION PLAN UPDATE

- Emerging Issues
 - Teacher professionalism and digital competencies for 21st centuries
 - Teachers education programmes - How it is embedded across all aspects of programme
 - New formats of teacher professional learning
 - Role of digital to enable teachers to engage and participate
- Key areas of focus
 - Promoting digital literacy and closing digital skills gap
 - Developing digital capacities in educational organisations
 - Making digital learning reality for all (online learning and high quality online content)
 - Harvesting data, predictive analytics and strategic foresight

ET2020 WG DELTA- PLA ZAGREB – KEY MESSAGES (I)

PLA#4: Teaching in contemporary learning environments: developing the digital skills of educators

Zagreb, 3-4 February 2020



ET2020 Working Group

Digital Education: Learning, Teaching and Assessment



- The need to focus on people
 - In discussions around learning we need to involve the key stakeholders and this include teachers, students, institutions and others
 - To strive for partnership and not to trench warfare
- Digital Competency of those working in Initial Teachers Education
 - Status and position of digital education within existing ITE programmes
- Digitally Competent Teaching Professionals
 - To support their students to use digital technologies
 - Teachers competencies to teach and develop digital competencies of their students
 - Teachers to keep their competencies up to date over the lifetime of their careers

ET2020 WG DELTA- PLA ZAGREB – KEY MESSAGES (2)

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Digital Education: Learning, Teaching and Assessment



- Selecting the Appropriate Competency Framework
 - DigiCompEdu – for teachers
 - SELFIE tool – for schools
 - SELFIE and DigiCompEdu could be utilised to enable teacher education institutions to gather baseline data on the digital competences of the organisation and of individual faculty members
- Creating Multiple Professional Learning Opportunities
 - To provide teachers with range of professional learning opportunities where they can develop their confidence and competences
 - Passive participation is out, teachers want more active participation, peer to peer model of teacher learning, blended learning
 - To provide professional learning opportunities that connect the discipline with digital technologies

ET2020 WG DELTA- PLA ZAGREB – KEY MESSAGES (3)

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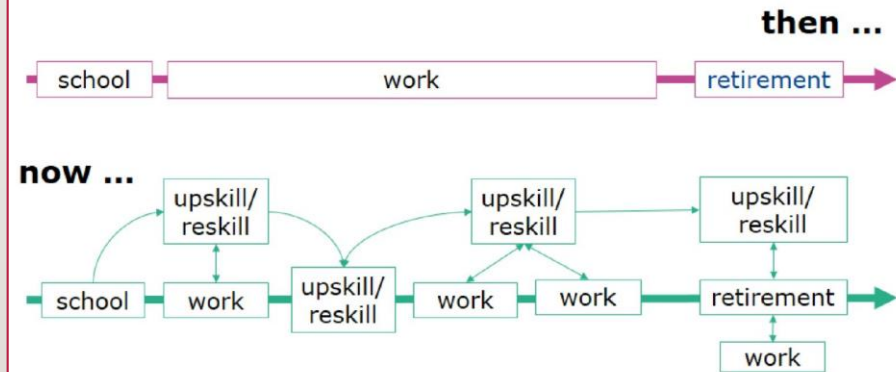
- Need to recognize and support innovative teachers professional learning
 - Better utilisation of existing European programmes (Erasmus+, Key Action 1 and Key Action 2)
 - New initiatives such as in Finland and Ireland: teachers education faculties are partnering with local schools
- Need to look at the digital competences of teacher education institutions and those working with teachers in initial teacher training
- How technologies (such as AI,AR,VR...) can solve current and emerging problems within the sector and how can they assist teachers in carrying out their professional duties

FUTURE OF TRANSITIONS

- Changing jobs more frequently
 - 15-20 different jobs in a lifetime
 - Content of work changing faster
 - Do 2022 54% of existing workforce will need up/reskilling
- Changing tasks more than redundant jobs - cobotisation
 - 2018: machines/algorithms 29% - humans 71%
 - 2022: machines/algorithms 42% – humans 58%

Source: EC-EPSC (2016), Eurofond (2018), WEF (2018)

Work – learning transitions



Source: M. Horgan, Ec DG Employment, Soc. Affairs and Inclusion, e-IRG Workshop, December 2019

DIGITAL SKILLS

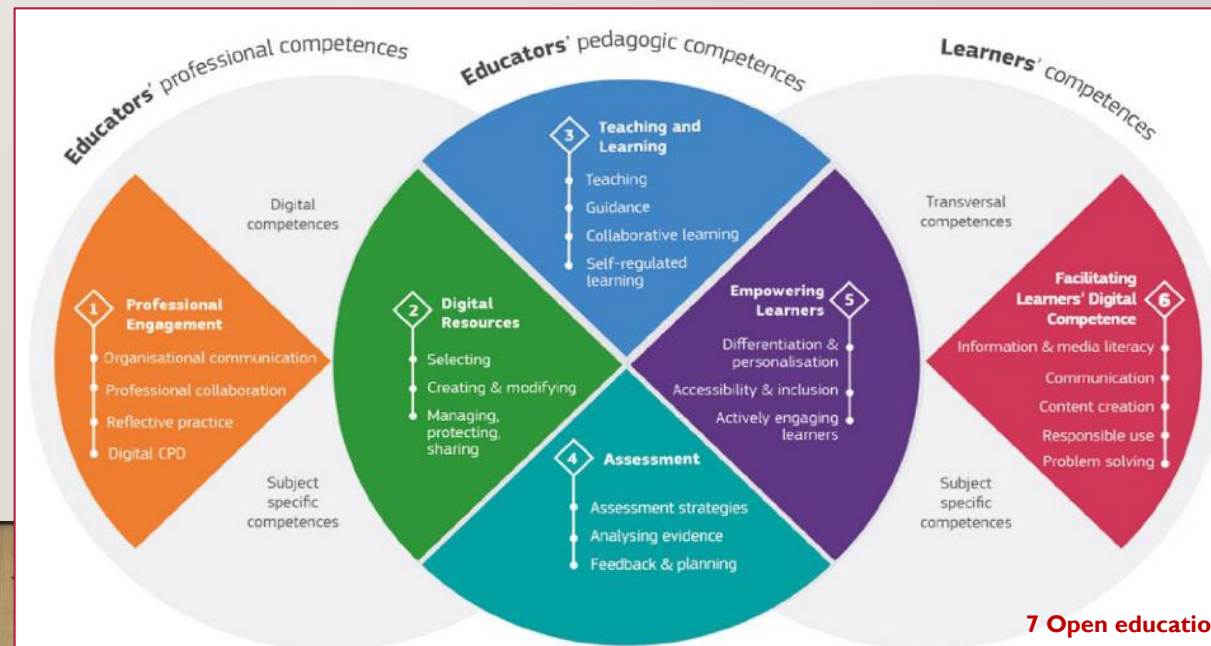
Why is it necessary to develop 21st century skills or prepare for the digital society?

We are responsible for ensuring that our students are educated enough to understand these problems and have the means to solve them. It is the responsibility of every educator as it affects all areas of knowledge.

Tony Bates, 2019

- Digital competence can be broadly defined as the confident, critical and creative use of ICT to achieve goals related to work, employability, learning, leisure, inclusion and/or participation in society. Digital competence is a transversal key competence which, as such, enables us to acquire other key (European Commission, 2012)
- digital literacy = digital tool knowledge + critical thinking + social engagement (*J. Fraser, 2012*)

- European Commission: Framework for Digital Competences of Educators
- **DigiCompEdu Check-In Self-Reflection Tool**
(in testing phase)



WHAT IS OPEN EDUCATION?

- A way of carrying out education, often using digital technologies. Its aim is to widen access and participation to everyone by removing barriers and making learning accessible, abundant, and customisable for all. It offers multiple ways of teaching and learning, building and sharing knowledge. It also provides a variety of access routes to formal and non-formal education, and connects the two.

Opening up Education: A Support Framework for Higher Education Institutions, 2016, EC JRC

- Open Education is approach to modernizing education in a systematic and holistic way, which embraces the use of digital technologies and goes beyond it.

Going Open: Policy Recommendations on Open Education in Europe, 2017, EC JRC



THE POTENTIAL OF OPEN EDUCATION

Increase the quality and the relevance of the educational offer by:

- Using open approaches to teaching and learning via digital technologies (free and open courses, MOOC, OER, flipped classroom...)
- Creating and using open source software and encouraging open standards
- Making research available as open access publications
- Facilitating digital credentials and encouraging personalized learning portfolios
- Recognizing open learning and new ways of issuing and registering verifiable credentials
- Promoting new funding opportunities for universities and diverse career paths for lecturers and researchers who are committed to open education
- Including multiple stakeholders in the making of a relevant and transparent higher education sector (ministries, regional authorities, decision makers, headmasters, educators, parents...)

OER & OEP



Open Educational Resources

- any kind of teaching materials – textbooks, syllabi, lesson plans, videos, readings, exams
- Free and unfettered access, and
- Free copyright permissions to engage in the 5R activities

Open Educational Practices

- Collaborative practices which include the creation, use and reuse of OER and pedagogical practices employing participatory technologies, peer learning, knowledge creation and sharing, and empowerment of learners. (Cronin, 2016)

BUT STILL, WHY ARE EDUCATORS RELUCTANT IN USE OF OER?

- Need more information about OER (recognizing benefits, awareness)
- Need training in production and re-use of OER (teachers' CPD)
- Need more support in preparation of their own materials as OER (technical, financial)
- Need more support in reorganization of their teaching to be more open (pedagogical)
- Need support on institutional level (policies, mechanism for OER QA)
- Need infrastructure to work on (tools, repositories)
- Need recognition and rewording for their work



COMMON ISSUES IN OPEN EDUCATIONAL PRACTICES WE ARE DEALING WITH

- Different cultures of openness
- Legal and contractual issues
- Technical and data management issues
- Cultural inertia/cultural change
- Roles, responsibilities and rewards

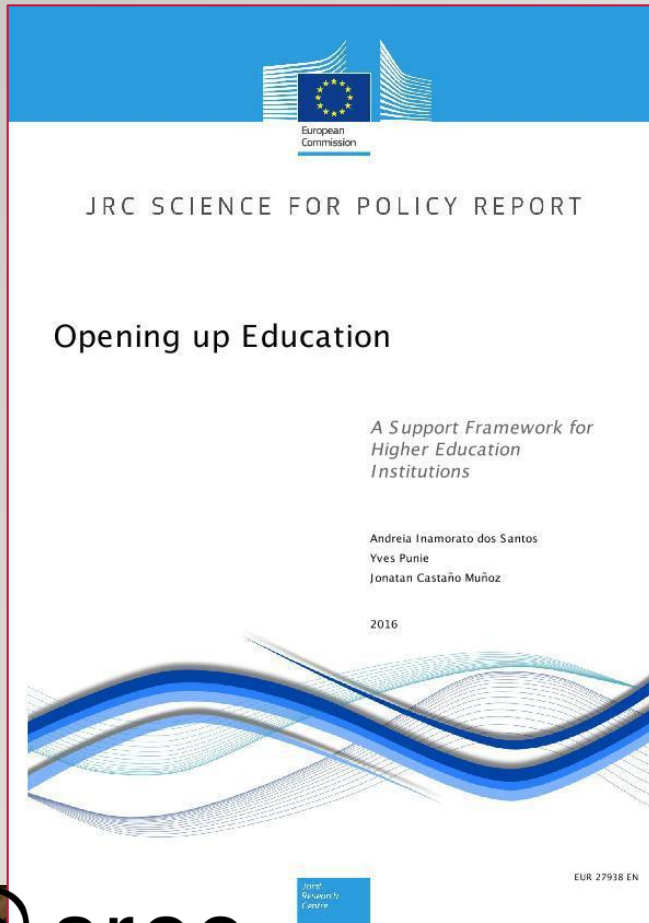


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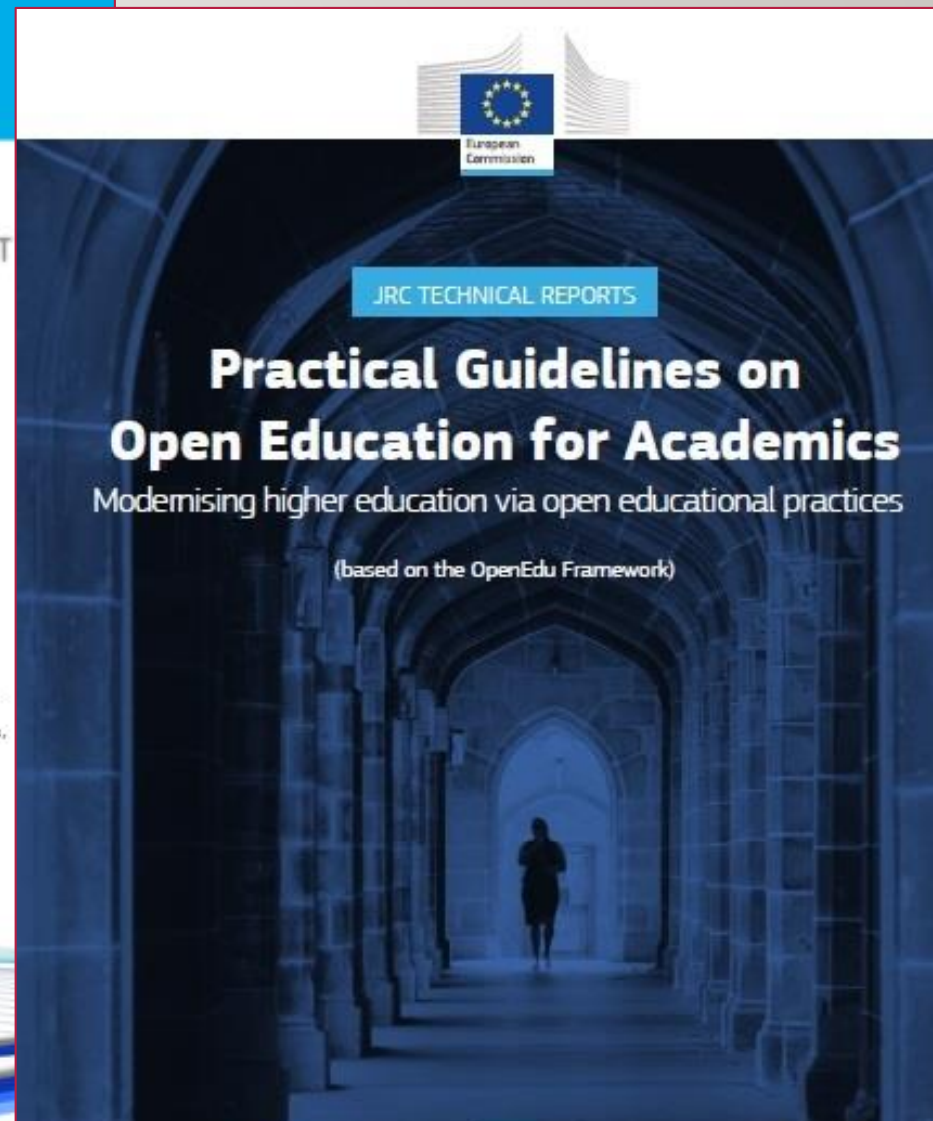
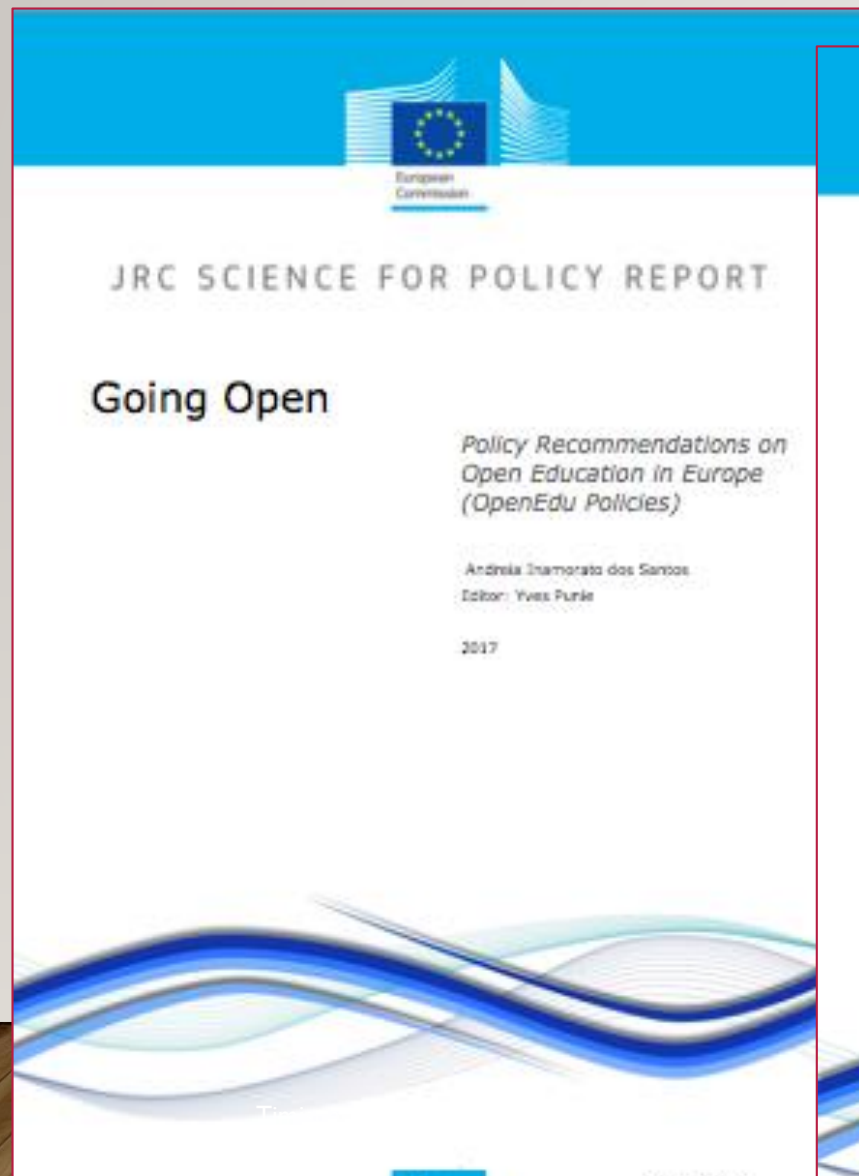
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OPEN EDU FRAMEWORK



EUROPEAN POLICIES ON OPEN EDUCATION



TEACHERS AND E-LEARNING

- Growing number of tools and technologies
- Application of ICT and e-learning has to be carefully planned and devised to be set in the pedagogical context
- Teachers need new knowledge and skills
- Teachers attitude towards e-learning
- Teacher's training how to efficiently implement new technologies into teaching and learning
- Support and training to use new technologies in a more innovative and efficient way

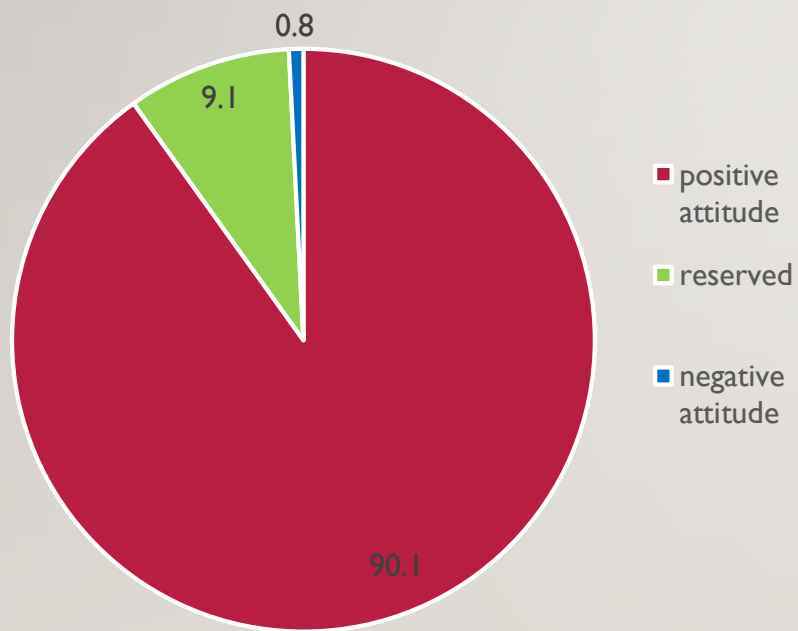
RESEARCH

- Research was conducted in 2018
- Aim of the research was to determine the attitude of teachers towards e-learning and what digital competence they need in order to apply e-learning in a quality manners in the educational process
- To find out how much the lack of possession of digital competencies influence teachers' readiness as well as their motivation to integrate new technologies into the educational process
- How important is good and systematic support
- Literature review and survey
- Target group: higher education teachers, primarily from the University of Zagreb

SURVEY

- Online questionnaire with 29 question in three sets:
 - Teachers' attitude towards new technologies in education and technology and tools used by teachers in teaching
 - Support to teachers in working with technologies
 - Teachers' training and digital competencies for ICT application in learning and teaching
- 474 teachers participated in the survey
 - 423 from the University of Zagreb
 - 52 from other higher education institutions
- 58,9% of participants are women

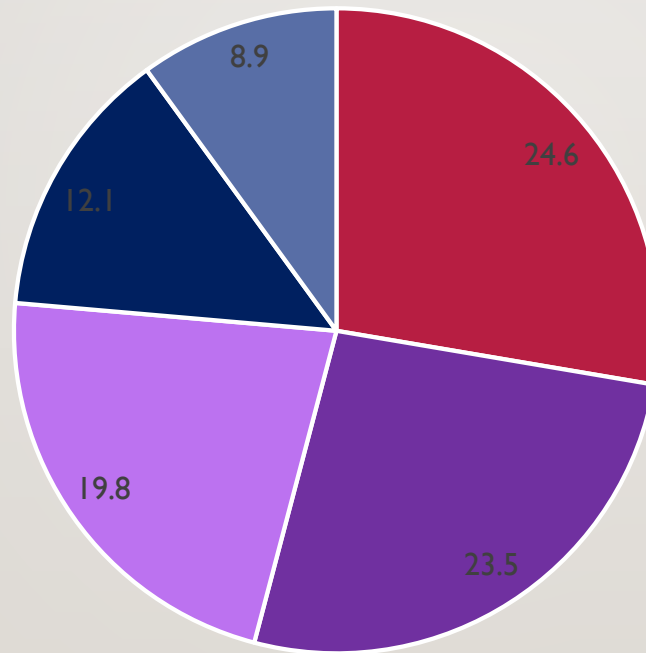
RESULTS - TEACHERS' ATTITUDE TOWARDS ICT AND E-LEARNING



- 63,7% of teachers believe that e-learning is important and significantly contributes to education quality improvement
- 34,9% of teachers think e-learning contributes to education quality improvement but not significantly
- 68,1% of teachers believe that the state at their institution is favourable or extremely favourable for the application of e-learning
- 61,0% of teachers think that the conditions (equipment for computers, the Internet) for e-learning and ICT use in education at their institutions are good or very good

HOW TEACHERS USE E-LEARNING IN THEIR TEACHING?

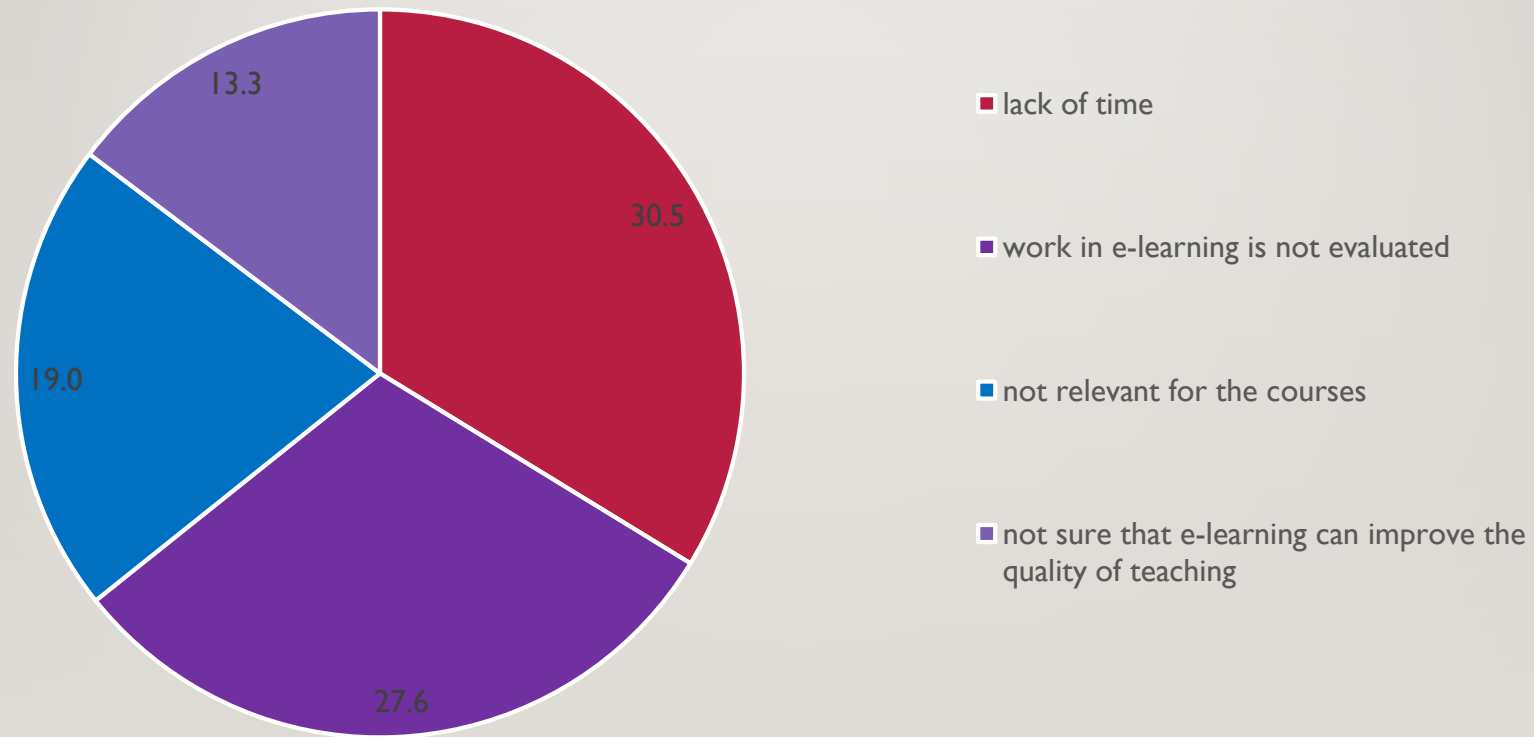
- Mostly as the classroom aid and as a blended learning



- To set up content online and to distribute teaching materials
- Information about the course and during the course
- Better communication with students and between students
- Evaluation and grading students work
- Feedback to students on their progress in course

REASONS FOR NOT HAVING THE E-LEARNING COMPONENT IN THEIR COURSES

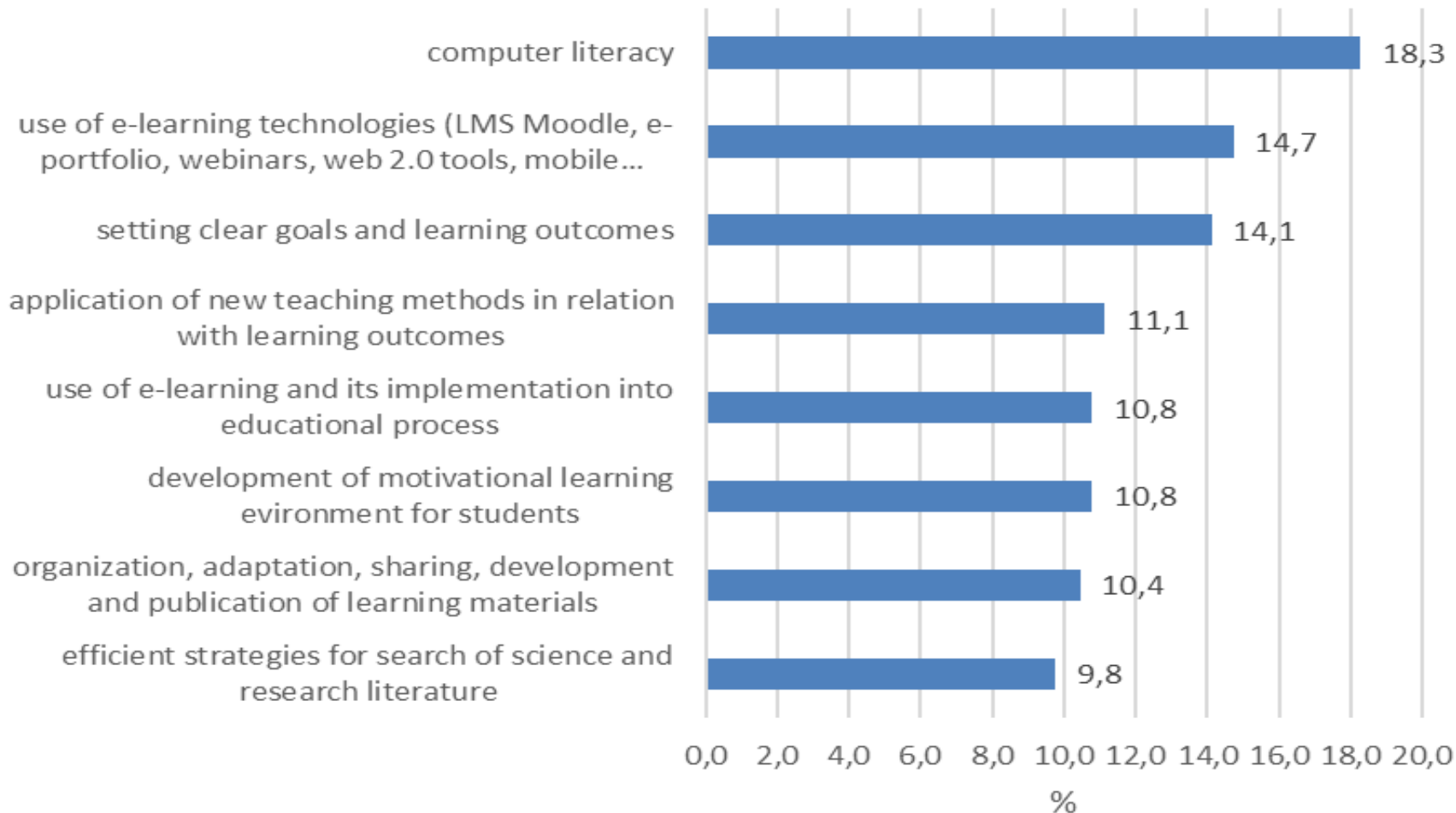
- 15,2% of teachers do not have the e-learning component in their courses



HOW THESE TEACHERS CAN BE ENCOURAGED TO START USING E-LEARNING?

- **Available and systematic support** in applying new technologies
- **Recognition** of their effort and innovativeness in teaching
- Availability of **professional trainings** in application of new technologies
- **Examples of good practices**
- If institution decides that **e-learning is compulsory**

TEACHERS IDENTIFIED COMPETENCIES THEY NEED TO EFFICIENTLY IMPLEMENT E-LEARNING



TEACHERS NEED SUPPORT

- in use of ICT in e-learning
- in preparation and development of e-courses
- in pedagogical and didactical issues
- they want tailored and continuous training

CONCLUSIONS (I)



- Teachers have:
 - Positive attitude towards e-learning
 - Belief that e-learning is important
 - Have e-learning component in their course
- Still:
 - E-learning is used on the basic level
 - They find themselves digitally competent for e-learning application in teaching
 - They do not attend CPD courses on ICT and e-learning

WHAT KIND OF TRAINING TEACHERS WANT?

- They like consultations one on one
- They want variety of training (f2f, mixed mode and online)
- Training should be interactive and engaging, they do not want to be passive participants
- They want examples of good practice
- They want to be part of community yet left on their own when it suits them
- They want good quality and systematic support
- They do not want to read long manuals



EDEN AND OPEN EDUCATION

- supporting and fostering open education
- building awareness on OER, open access, openness in education and research
- joining and enhancing the Open Education movement and its impact on teaching and learning worldwide
- contributing to the global movement of Open Education Week
- to raise awareness about the movement and its impact on teaching and learning worldwide, the free and open educational opportunities that exist for everyone, everywhere, right now

EDEN OPEN EDUCATION WEEK

- Since 2017... in March
- <https://www.eden-online.org/oew-2020/>
- Topics:
 - **OER and Open Pedagogies – Best Practices**
 - **Open Education Recognition and Credentials**
 - **Open Education Technologies Open Education for Civil Engagement and Democracy**
 - **Unboxing the Textbook for an Open World**
 - **Microlearning and Quality for Lifelong Learning in the Digital Age**