



Creating European standards for open education and  
open learning resources – EU-StORe  
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# EU-StORe

## OER and Educational Innovation

*Creating European standards for open education and open learning resources- EU-StORe  
Research on open learning material and open educational resource*

Partner 7: University of Malta – MLT

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## **EU-StORe – Open Educational Resources and Educational Renovation**

What is the role of OER in promoting Educational renovation? Is it possible to use OER to provide educational experiences capable of enriching and possibly transforming formal and informal 21<sup>st</sup> century learning? These are two key questions that the EUStORe project should attempt to address by evaluating OER considering their potential to bring about pedagogical change beyond the ubiquitous didactical approach.

The main focus of an effective and relevant educational process is the development of Knowledge society skills, with digital competence having both a leading and an enabling role. International reports such as 'Digital Education – Making the change happen' MCEETYA (2008); UNESCO ICT competence for teachers Hine, P. (2011), the on-line document from the 'Partnership for 21st century skills', European Commission policy report (2013): 'DIGCOMP: A Framework for Developing and Understanding Digital Competence in Europe' emphasise a developmental approach to bring about renovation of Education. In this process digital technologies and open educational resources serve as major catalysts in bringing about pedagogical innovation. Schools need to be changed from teaching institutions, driven by content-centred approaches, to learning institutions that use the context of curricular subjects to nurture knowledge society competences. The curricular content platform should be used to develop identified competences.

These reports recommend that Education should evolve along a three stage developmental trajectory. The initial **Technology Literacy** stage enables learners to use ICT to learn more efficiently. In the second **Knowledge Deepening** level learners acquire in-depth knowledge of their school subjects and apply it to complex, real-world problems. The third level focuses on **Knowledge Creation** and serves to develop competences to create the new knowledge required for more harmonious, fulfilling and prosperous societies. In this evolving process the role of Digital technologies and open educational resources is to catalyse the much deserved pedagogical change from one focused on knowledge acquisition to one based on knowledge application and knowledge creation. The current predominant teaching-centred approach should be complemented with truly student-centred approaches that employ digital technologies to mediate different modes of learning and assessment. Consequently the ability to identify, use, evaluate and create OER becomes a mandatory competence to be developed and refined throughout the educational process, and in particular with the professional development of teachers. The perennial need for innovating teaching and learning practices brought about by the constant change in the nature and organisation of knowledge, the continual emergence of new digital technologies and accompanying nascent behaviours, and the affinity of the younger generations with technology can only be mitigated by adopting a learning design attitude and approach that exploits the full potential of OER.

This means that when using and subsequently evaluating OER, a process-oriented methodology is more appropriate. Beyond the basic use for content acquisition, in the context of 21<sup>st</sup> century education, OER are used to promote identified processes through which communication, different forms of learning, socialisation, knowledge creation and sharing are nurtured. For example the ePortfolio open educational resource Mahara could

be used, not just to showcase knowledge acquisition, but more important to promote autonomous learning, collaborative learning, individual and collective reflections and the nurturing of interactions within social networks. The different processes are the main outcomes of using the educational resource. The same principle can be applied to MOOCs in which interactive experiences beyond the acquisition of domain knowledge characterise the learning experience. Process-oriented pedagogical models, such as those proposed by Bonanno 2011 & 2015, that organise learning and its assessment along different levels and dimensions of interactions, are more appropriate for using and evaluating OER. Consequently, OER can be categorised according to the pedagogical strategies they can mediate and according to the competences they can develop.

The Framework for 21<sup>st</sup> Century skills describes how learning in core subjects and 21<sup>st</sup> century themes should not be the ultimate goal of the educational process, but more to provide the pedagogical context for developing 21<sup>st</sup> century competences. Three major competence categories are identified: 'Life and Career skills', 'Learning and Innovation Skills' and 'Information, Media and Technology Skills'.

Life and Career skills are manifested through one's ability to navigate the complex life and work environments in the globally competitive information age requiring flexibility and adaptability, initiative and self-direction, social and cross-cultural skills, productivity and accountability, together with leadership and responsibility. Flexibility is manifested through one's ability to understand, negotiate and balance diverse views and beliefs to reach workable solutions, particularly in multi-cultural environments. One's ability to adapt to change is shown through one's adjustment to varied roles, jobs responsibilities, schedules and contexts.

Initiative and self-direction is shown through one's ability to manage goals, work independently and manage own learning. Social and cross-cultural skills are manifested by one's ability to interact effectively with others and work effectively in diverse teams. Productivity and accountability is shown by skills in managing projects and produce results. Leadership and responsibility involve skills for guiding and leading others and for being responsible to others.

The competence for Creativity and Innovation is manifested through critical thinking and problem solving and through communication and collaboration. One's creative and innovative potential is shown through creative thinking, creative collaboration and the ability to implement innovations. Critical thinking and problem solving involves one's ability to reason effectively, use systems thinking, make judgement, take decisions and solve problems. Communication and collaboration involves the ability to communicate clearly and to collaborate with others.

Information, Media and Technology competences are also described by this model through sub-categories of skills. Information literacy includes one's ability to 'access and evaluate information' and 'the ability to use and manage information'. Media literacy involves one's ability to analyze media and to create media products. ICT literacy is manifested through one's skill in applying digital technologies effectively as a tool to

research, organise, evaluate and communicate information and to communicate and network with others. The Digicomp framework details the various aspects of digital competence by categorising 21 competences into the following five major categories: Information, Communication, Content-creation, safety and problem-solving. Each of the competences is described in terms of knowledge, skills, and attitudes.

This competence framework offers the possibility to reflect about OER from a learning outcomes perspective. A resource is evaluated and defined by the type of competence or competences a user develops as a result of interacting with it. This user-centric approach is much more valid and relevant to designing and evaluating learning activities being driven by pedagogical principles and experience. Thus one way to evaluate OER is to consider the pedagogical principles and learning experiences they are capable to promote and support.

### **OER in Malta**

The integration of OER in the local educational context is increasingly taking place in all levels of the educational system both through official policy and through practitioners' experience. The institutions of higher education in Malta (Eg. University of Malta, Malta College for Arts, Science and Technology, Institute for Tourism Studies, Private Higher Education Institutes) follow a policy that promotes the integration and use of OER in their academic curricula. For example Moodle is used as the institutional Virtual Learning Environment. The official policy of the University of Malta is to promote the use of OER. Thus, besides adopting Moodle as the official VLE, currently there is a drive to introduce Mahara as the official ePortfolio system and to promote the use of Google Educational Apps with all the academic staff of the University. Training courses are organised by the 'IT Services' Support Unit to introduce academics to these OER and provides continuous support when being implemented in their course. The Faculty of Education extends this policy a step further by promoting the use of OER in the various Programmes of studies. In the undergraduate programme, students follow units MSL 4203: 'Introduction to Technology-Enhanced Learning' which promotes the use of OER in teaching and learning. The study unit MSL4205 (Designing TEL) trains students in using OER to design learning activities for promoting different modes of learning (i.e. learning by Instruction, Exploration, Designing, Collaboration, Reflection). MSL 4206 (Open Education: Building Resources for the Open Community) familiarise students with available OER and promotes a culture for building and sharing OER with the local and global communities. The Faculty of Education also provides two Masters programmes, a taught Masters in 'Educational Technology and Innovation' and a 'Masters in Technology-Enhanced Learning' by research. Both these Masters courses use extensively OER in their methodology and at the same time promote the integration and use of existing OER, together with the curation, creation and sharing of new OER.

An interesting situation regarding OER is evolving within the primary Education sector in Malta. As part of the national strategy to introduce eTablets for each student in the primary, a pilot project is currently being implemented to evaluate the different aspects of tablets and their use in the curriculum. The directorate for Quality and standards in

Education always promoted the use of OER in schools, especially through ICT support teachers. The tablet project moved the onus onto the teachers who, besides the suggestions from the ICT support teachers, they had to search, familiarise and use different categories of OER in their classes. The most curious aspect was that those teacher (and their classes) given tablets with access only to brand-related or company-based resources and apps, felt the great limitation regarding the access of open on-line resources. They denounced the fact that their tablets were restricted from using freely available resources as compared to those classes given unlocked tablets. Teachers are communicating and interacting in their professional networks advocating an 'OER strategy' to be used with rolled-out tablets. So they are advising authorities to adopt brands of tablets that follow an open policy regarding OER. This grassroots experience is accelerating the adoption and use of OER creating an urgent need for OER evaluation models and guidelines from initiatives like EUSTORe.

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### Target Research Group

Driven by the need to promote 21<sup>st</sup> century skills and to promote digital competences to different stakeholders in the Education system, the target groups which I would like to explore regarding their OER needs are students in initial teacher education, in-service teachers, school-leavers and students in post-secondary education. The tablet project has shown the different roles teachers need to adopt with regards to OER – consumers, promoters and creators of OER. Dhanarajan & Abeywardena (2013, pp.9-10) state that 'teachers' lack in own skills was a leading barrier against creating OER, and lack in ability to locate quality OER was a leading barrier against reusing OER.' Stracke & Koskinen (2015, pg3) in their eLearning Paper: 'Open Learning and Its Future of Assessment, Certification and Quality Assurance' show the need to develop guideline to assist teachers in:

*'The rationale for developing these Guidelines for teachers as creators of their own OER is essentially to broaden the author-base to involve teachers as reflective practitioners..... Developing a culture of quality through teacher continuous professional reflection may be the best way forward rather than simply aiming to digitally store somewhat permanently an individual teacher's own lesson materials.'*

The same authors also describe the beneficial effect of OER for school leavers and post-secondary students:

*'Good quality OER can widen informal access to education through independent study and widen formal access through prior learning. Good quality OER can also prevent dropout from formal education through offering remedial study resources.'*

Thus one has to evaluate OER in relation to the competences that need to be nurtured in the various levels and contexts of the educational process.

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