

# Chapter 14

## European Learning Resource Exchange: A Platform for Collaboration of Researchers, Policy Makers, Practitioners, and Publishers to Share Digital Learning Resources and New E-Learning Practices

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### **ABSTRACT**

*The chapter presents European Learning Resource Exchange (LRE) system and scientific research results used for its development. LRE is a platform for collaboration of researchers, policy- and decision-makers, content providers (publishers), and practitioners (teachers) to share digital learning resources/ objects – LOs and new e-learning practices. The chapter presents research on LRE architecture, interoperability, reusability and quality of LOs, and new e-Learning practices using LOs. Importance of pan-European collaboration of scientists, policy makers, publishers and practitioners is shown using examples of several LRE best practice networks. Scientific models and methods to evaluate quality and reusability of LOs are presented in more detail. The chapter also presents the results of several large scale R&D projects co-funded by EU programmes that were and are implemented currently to support LRE. The author believes that research results and best practices presented in the chapter will be useful for all aforementioned educational stakeholders groups.*

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## **INTRODUCTION**

European Learning Resource Exchange (LRE) system is a federation of learning objects (LOs) repositories that currently offers over 130,000 LOs and assets from over 25 providers. LRE is run by European Schoolnet (EUN, 2011), a unique public-sector consortium funded by 31 European Ministries of Education (MoE) and supported by the European Commission. EUN was created more than 10 years ago to bring about innovation in teaching and learning to its key stakeholders: MoE, schools, teachers and researchers. With some 40 staff in Brussels, EUN serves the needs of education policy-makers and researchers, schools and suppliers. It exists to help develop learning opportunities for young people across Europe through communication and information exchange at all levels. Its activities are determined by the needs of the MoE, the European Commission and industrial partners, including companies from the publishing and ICT industries.

European Schoolnet's activities are divided among three areas of work:

- Policy, research and innovation
- Schools services
- Learning resource exchange and interoperability

EUN and its supporting MoE have started to create LRE while implementing EU 5FP CELEBRATE project in 2002, and since that time several large scale EU-funded R&D projects have been implemented to develop LRE. The most important of them were: CALIBRATE (2005-2008), MELT (2007-2010), ASPECT (2008-2011), INSPIRE (2008-2009), and also ongoing eQNet (2009-2012) and iTEC (2010-2014) projects.

The author was/is a leader of Lithuanian research and development teams in FP6 CALIBRATE and eContentplus ASPECT projects mainly aimed at LRE architecture and interoperability issues, and also in LLP INSPIRE, eQNet,

and FP7 iTEC projects aimed at LOs application in teaching and learning. The author also was/is a leader of research work packages in INSPIRE and eQNet projects, and also an expert member of several international interoperability organisations such as LTSO and IMS.

The chapter presents research on LRE architecture, interoperability, reusability and quality of LOs, and new e-learning practices on using LOs and its impact on learning. Importance of pan-European collaboration of scientists, policy makers, publishers and practitioners is shown using examples of several best practice networks such as ASPECT and eQNet. Scientific models and methods to evaluate quality and reusability of LOs are presented in more detail. The chapter also presents the main results of several large scale R&D projects co-funded by European Commission that were and are implemented to support LRE, and also the main results of the author's own research on the analysed topics obtained while implementing the aforementioned projects in Lithuania.

The rest of the chapter is organised as follows. The 2<sup>nd</sup> section presents the main stages and projects on LRE creation; the 3<sup>rd</sup> section presents the main research results on federating repositories, interoperability and standards, the 4<sup>th</sup> section presents main results on reusability of LOs and evaluation of their quality, the 5<sup>th</sup> section presents the main research results of use of LOs in real pedagogical practice in schools and its impact on learning. Those sections are also enriched by the author's own research results on the analysed topics. The 6<sup>th</sup> section offers further research trends, and conclusions are provided in the 7<sup>th</sup> section.

## **CREATION OF LRE**

### **CALIBRATE**

The CALIBRATE project built on the work of three previous R&D projects (CELEBRATE,

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