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Roundtable: Build your Responsive Open Learning Environment

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Abstract: The European research project ROLE (Responsive Open Learning Environments) is aiming at empowering learners for self-regulated learning within a personalised learning environment. Towards this goal, ROLE has developed a number of learning technologies, addressing a variety of learning requirements. The purpose of this roundtable is to discuss the applications of these technologies in different learning contexts, as well as the challenges associated with enabling and supporting self-regulated learning.

Introduction

Learning Management Systems (LMS) have dominated the Technology-Enhanced Learning (TEL) landscape for years. They have been widely used by academic institutions for delivering their distance learning programmes, as well as for supporting their students outside the classroom. They have also been established in the business sector as the mainstream platform for delivering training services to employees. Popular examples of LMS used by the academic as well as the business world include Blackboard (www.blackboard.com), Moodle (<http://moodle.org>), and Sakai (<http://sakaiproject.org>).

However, the advent of Web 2.0 has altered the landscape in TEL. Learners nowadays have access to a variety of learning tools and services on the web. These tools and services are usually provided by different vendors and in many cases are open and free. Repositories like Wikipedia (www.wikipedia.org), YouTube (www.youtube.com), SlideShare (www.slideshare.net) and iTunes U (www.apple.com/education/itunes-u) offer access to a wide range of learning materials for free. Augmenting and configuring the diverse and distributed Web 2.0 tools and services in order to address the needs and preferences of individual learners is a significant challenge for modern online learning environments.

As opposed to formal learning, which is mostly instructor-led, informal learning is driven by self-study and the initiative of individuals, as well as communities of learners with common goals. The transition from the traditional approach of LMS to Web 2.0-based learning solutions bears significant benefits for informal learners. It puts emphasis to their needs and preferences, providing them with a wider choice of learning resources to choose from. In addition, the success of initiatives such as the Khan Academy (www.khanacademy.org) has proven the importance of Web 2.0-enabled crowdsourcing in informal learning.

The Personal Learning Environment (PLE) is a facility for an individual to access, aggregate, configure and manipulate digital artefacts of their ongoing learning experiences. The PLE follows a learner-centric approach, allowing the use of lightweight services and tools that belong to and are controlled by individual learners. Rather than integrating different services into a centralised system, the PLE provides the learner with a variety of services and hands over control to her to select and use these services the way she deems fit (Chatti *et al.*, 2007, Fiedler and Våljataga, 2010, Wilson, 2008).

The emergence of the PLE has greatly facilitated the use and sharing of open and reusable learning resources online. Learners can access, download, remix, and republish a wide variety of learning materials through open services provided on the cloud. Open Educational Resources (OER) can be described as “teaching, learning and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use or repurposing by others depending on which Creative Commons license is used” (Atkins *et al.*, 2007).

Self-Regulated Learning (SRL) comprises an essential aspect of the PLE, as it enables learners to become “metacognitively, motivationally, and behaviourally active participants in their own learning process” (Zimmerman, 1989). Although the psycho-pedagogical theories around SRL predate very much the advent of

the PLE, SRL is a core characteristic of the latter. SRL is enabled within the PLE through the assembly of independent resources in a way that fulfils a specific learning goal. By following this paradigm, the PLE allows learners to regulate their own learning, thus greatly enhancing their learning outcomes (Steffens, 2006, Fruhmann *et al.*, 2010, Mikroyannidis, 2011).

Building a Responsive Open Learning Environment

As online learners become more discerning in terms of the choices related to the types and styles of their potential study materials, they will potentially seek content from multiple sources. In addition, because of the flexibility and ease of use that enables many users to customise that content, those same learners may wish to personalise their learning environment.

The Responsive Open Learning Environments (ROLE) project is a European funded initiative that has been established to research and explore a variety of tools and services that enable learners to build their PLE, based on their needs and preferences (www.role-project.eu). ROLE is bringing forward the innovations in PLEs and SRL, through research in the following directions:

- User-centric approach to learning environments with a focus on end-user development to design and control a personal learning environment.
- Contemporary pedagogical models for personalisation in learning networks, SRL and collaboration in networked communities.
- Contemporary engineering frameworks for designing, integrating, orchestrating, and evaluating learning services, tools, and content.
- Frameworks for evaluating learner interactions in learning networks.

The PLEs investigated by this project are primarily enabled by widgets, which are micro-applications performing a dedicated task. This task can be as simple as showing news headlines or weather forecasts, but also more complex like facilitating language learning or collaborative authoring. Widgets can be either desktop-based or web-based. Desktop-based widgets reside locally on your computer and may access the web for information, such as a desktop widget that shows the local temperature and weather. Web-based widgets reside on the web and can be embedded on a web page, such as an RSS reader widget that fetches news on your start page. Web-based widgets have proven quite popular as they enhance the interactivity and personalisation of web sites.

In order to build a Responsive Open Learning Environment, the learner will need to access a widget store. A widget store is a directory of widgets, where widgets are commonly categorised according to their purpose, e.g. widgets for planning, communication, collaboration, etc. An example of such a categorisation is shown in Figure 1. The learner can browse and download the widgets, as well as provide feedback on them in the form of ratings and comments. The ROLE project has built a widget store dedicated to widgets for learning purposes, which can be accessed at www.role-widgetstore.eu.

After selecting the appropriate widgets, the learner needs to add them to the web space of their choice (e.g. a blog) and start using them for their learning, either by themselves or in collaboration with other learners. Widgets can also be embedded inside a LMS, such as Moodle, thus enhancing its functionality and content, as shown in Figure 2. Additionally, ROLE offers a facility for creating a shared learning space and populating it with widgets (<http://role-sandbox.eu>).

For more information on building a Responsive Open Learning Environment and using it to become a self-regulated learner, one can refer to the following free online courses that have been developed by ROLE:

- *Responsive Open Learning Environments* (<http://labspace.open.ac.uk/course/view.php?id=7433>): This course provides an overview of the concepts behind PLEs and also demonstrates a selection of ROLE widgets within learning activities. Figure 3 shows such an activity, where the learner is invited to use a ROLE widget in order to complete a series of learning tasks.
- *Self Regulated Learning* (<http://labspace.open.ac.uk/course/view.php?id=7898>): This course introduces the concept of SRL and guides learners into using the ROLE tools in order to apply the SRL principles into their own learning.

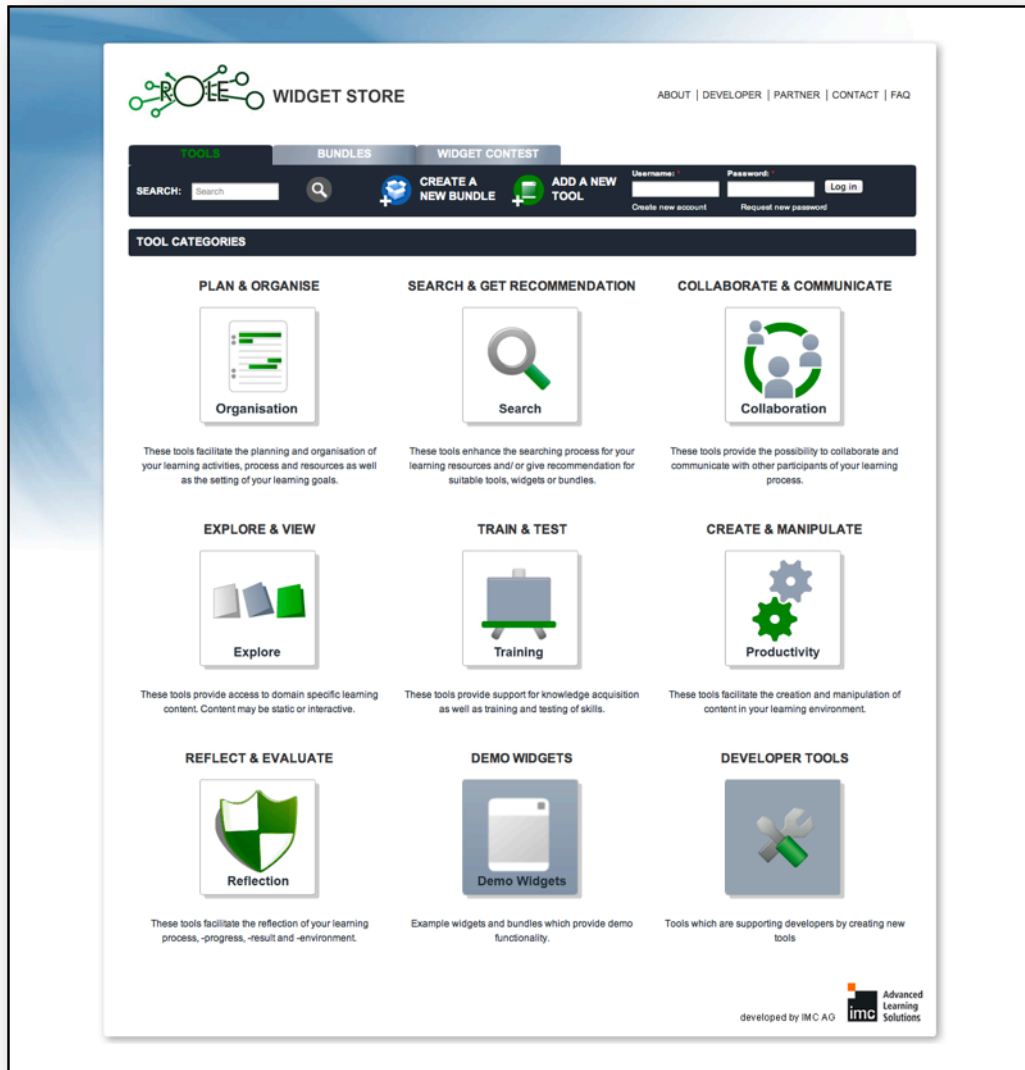


Figure 1: The ROLE widget store (www.role-widgetstore.eu) offers widgets for a variety of learning purposes.

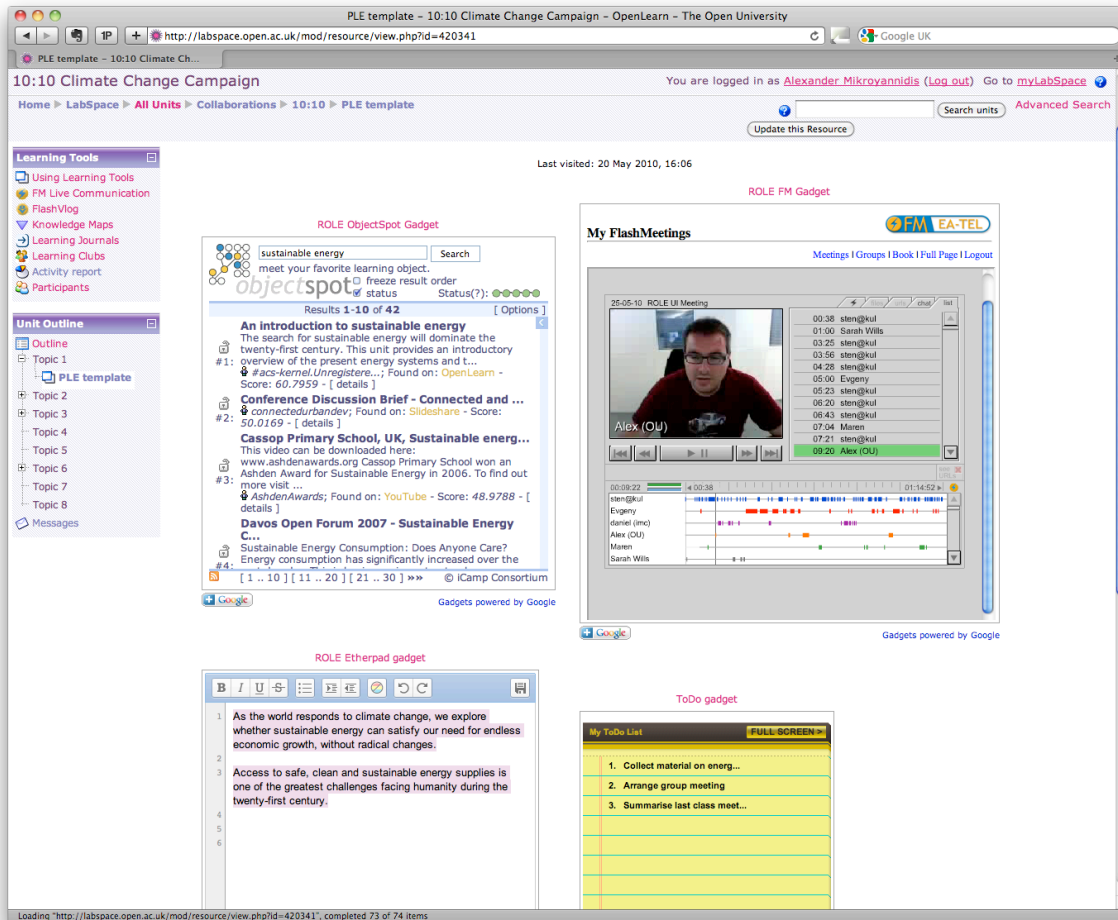


Figure 2: ROLE widgets embedded inside a Moodle course. The learner uses them to search for learning resources, as well as collaborate with other learners through videoconferencing and a shared writing pad.



Figure 3: A learning activity of a free online course developed by ROLE, featuring a search widget and a step-by-step guide on completing a series of learning tasks.

Conclusion

The ROLE project is centred on the concept of Self-Regulated Learning, providing support to learners in planning their learning strategy, finding the appropriate learning resources, and reflecting on their learning strategy and progress.

The objectives of this roundtable are to:

- Raise awareness about the range of resources, tools and methods available to enable Responsive Open Learning Environments and Self-Regulated Learning.
- Discuss the different approaches and challenges related to Responsive Open Learning Environments and Self-Regulated Learning in various learning contexts.

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References

Atkins, D. E., Brown, J. S. & Hammond, A. L. (2007) A Review of the Open Educational Resources (OER) Movement: Achievements, Challenges, and New Opportunities. The William and Flora Hewlett Foundation, http://www.oerdives.org/wp-content/uploads/2007/03/a-review-of-the-open-educational-resources-oer-movement_final.pdf.

Chatti, M. A., Jarke, M. & Frosch-Wilke, D. (2007) The future of e-learning: a shift to knowledge networking and social software. *International Journal of Knowledge and Learning*, 3(4/5), 404-420.

Fiedler, S. & Väljataga, T. (2010) Personal learning environments: concept or technology? *Proceedings of PLE 2010 conference*. http://pleconference.citilab.eu/wp-content/uploads/2010/07/ple2010_submission_45.pdf.

Fruhmann, K., Nussbaumer, A. & Albert, D. (2010) A Psycho-Pedagogical Framework for Self-Regulated Learning in a Responsive Open Learning Environment. *International Conference eLearning Baltics Science (eLBa Science 2010)*. Rostock, Germany.

Mikroyannidis, A. (2011) Supporting Self-Regulated Learning within a Personal Learning Environment: The OpenLearn case study. IN KRAVCIK, M., LAW, E. & NUSSBAUMER, A. (Eds.) *International Workshop on Self-Regulated Learning in Responsive Open Learning Environments (SRL-ROLE 2011)*, 11th IEEE International Conference on Advanced Learning Technologies (ICALT 2011). Athens, Georgia, USA, IEEE Computer Society Publications.

Steffens, K. (2006) Self-Regulated Learning in Technology-Enhanced Learning Environments: lessons of a European peer review. *European Journal of Education*, 41(3/4), 353-379.

Wilson, S. (2008) Patterns of personal learning environments. *Interactive Learning Environments*, 16(1), 17-34.
Zimmerman, B. J. (1989) A Social Cognitive View of Self-Regulated Academic Learning. *Journal of Educational Psychology*, 81(3), 329- 339.