



CHAPTER 02. INTRODUCING PERSONAL LEARNING ENVIRONMENTS TO INFORMAL LEARNERS: LESSONS LEARNED FROM THE OPENLEARN CASE STUDY

THE ROLE PROJECT TEAM
Knowledge Media Institute, The Open University

Alexander Mikroyannidis
Teresa Connolly

ABSTRACT

This chapter introduces a widget-based Personal Learning Environment (PLE) specifically designed for finding and sharing Open Educational Resources (OER) on the web.

COLEARNING OBJECTIVES

The aim of this investigation is to raise awareness about the capabilities of widget-based PLEs to researchers, educators and learners that are interested in finding and sharing OER.

REUSABILITY

The content of this chapter has been adapted from a paper submitted by the same authors to the PLE Conference 2012.

This chapter can be reused by:

- Researchers, educators, and learners who want to find and share OER on the web.
- Researchers who investigate the impact and capabilities of PLEs in informal learning.
- Content providers who are looking for new ways to expose their OER on the web.

KEYWORDS

Personal learning environment, widget, open educational resource



1. OPENING WORDS

What is a widget?

What is a Personal Learning Environment (PLE)?

How can a widget-based PLE enable the finding and sharing of OER?



Figure 1: A widget-based PLE for finding and sharing OER

Author: Alexander Mikroyannidis and Teresa Connolly

Source: <http://tinyurl.com/role-jte/>

Description: This figure is a screenshot of a widget-based PLE developed by the ROLE project.

Objective: Find and share OER on the web with the use of widgets.

License: Creative Commons

Reference: Shared in the [ROLE Showcase Platform](#)



Figure 1 shows a screenshot of a PLE consisting of 3 widgets developed by the European project ROLE. The first widget is called Binocs and enables social search of OER. Users can specify the format of OER they wish to find (e.g. videos, presentations, etc.) and the repositories they wish to search. The repositories available to search include both OER repositories (e.g. GLOBE, OpenScout, iCoper), as well as some popular Web 2.0 repositories (e.g. YouTube, SlideShare, Wikipedia). Users can recommend the search results to other users of the widget, and also rate them by 'liking' or 'disliking' them. Based on this social rating, the results are ranked accordingly for all the users of the widget.

The second widget is called ObjectSpot and is a search widget specialised to bibliography search. The widget searches across some OER repositories, such as OpenLearn and iTunes U, as well as the top repositories of scientific publications, such as Google Scholar, DBLP, and CiteSeerX.

The third widget is called EtherPad and provides access to a free service on the web that enables users to work collaboratively on a text document. When multiple authors edit the same document simultaneously, any changes are instantly reflected on everyone's screen. This is particularly useful for meeting notes, drafting sessions, education, team programming, and more.

2. INTRODUCTION AND DEFINITIONS

Widget (or gadget): A widget is a micro-application 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. A Google widget is commonly referred to as a gadget.

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.

Widget bundle: A widget bundle is a set of widgets that complement each other and are utilised together for a common purpose. For example, a widget bundle for collaborative authoring can consist of widgets such as Google Docs and Google Talk.

Widget store: A widget store is a directory of widgets. Widgets are commonly categorised within a widget store according to their purpose, e.g. widgets for planning, communication, and collaboration. Users can browse and download the widgets, as well as provide feedback on the widgets in the form of ratings and comments. A popular widget store is the Google gadget directory, which lists thousands of free widgets.

Personal Learning Environment: A 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).

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 (Fruhmann et al., 2010, Steffens, 2006).

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).

The European project ROLE (Responsive Open Learning Environments – www.role-project.eu) is aiming at empowering learners for lifelong and personalised learning within a responsive open learning environment. In order to study and evaluate the applications of PLEs in a variety of learning contexts, the ROLE project has setup a number of test-beds. The ROLE test-beds cover a wide variety of rich contexts in which there is potential for significant impacts of both personal learning and responsive open learning environments. Each test-bed concentrates on researching a large sample of representative individuals; this enables ROLE as a whole to collect experiences covering a large variety of learning contexts and requirements.

The following videos illustrate the various aspects of the ROLE project, in terms of the work being undertaken in PLEs and SRL.



Video 1: The ROLE Language Learning Widgets

Author: The ROLE project consortium

Source: http://youtu.be/Vyk_m0FrRG4

Objectives: Introduce the use of the ROLE language learning widgets through a learning scenario.

License: Creative Commons

Reference: Shared in YouTube



Video 2: PLEShare – share your learning experience

Author: The ROLE project consortium

Source: <http://vimeo.com/25817690>

Objectives: Raise awareness about sharing learning experiences through the ROLE tools.

License: Creative Commons

Reference: Shared in Vimeo



Video 3: SRL teaser video

Author: The ROLE project consortium

Source: <http://youtu.be/jTa1vOH6JjA>

Objectives: Introduce learners to SRL and give them a taste of how their learning can be improved with the use of the ROLE tools.

License: Creative Commons

Reference: Shared in YouTube



3. THE CASE STUDY

The Open University (OU), UK is one of the ROLE test-beds, concerning the transition from formal learning, where courses are exclusively prepared and delivered by the OU, towards informal learning, where the learner is in control of the whole learning process. This transition is being implemented within this test-bed as a transition from the traditional LMS towards the PLE paradigm (Mikroyannidis, 2011, Mikroyannidis et al., 2010a, Mikroyannidis et al., 2010b).

Our case study focuses on the learners' potential transition from formal to informal learning. The test-bed in question is the OER repository OpenLearn offered by the OU. OpenLearn (<http://openlearn.open.ac.uk>) currently offers in excess of 6,000 hours of study materials in a variety of formats. These include materials repurposed as OER from original OU courses i.e. formal delivery as well as bespoke OER created by both OpenLearn academics and non-OU educators i.e. enabling informal delivery.

OpenLearn users are primarily informal learners, who want to find and study OER either individually or in collaboration with others. These learners can be in formal education e.g. taking an accredited University course elsewhere and simply looking for additional materials to add value to their primary course or they maybe, what is often described as, "leisure" learners i.e. those who simply want to learn for themselves with no expectation of formal accreditation.

OpenLearn currently uses Moodle as a Learning Management System (LMS) platform. Therefore, in order to add value to those potential learning experiences, this test-bed has endeavoured to raise awareness of PLEs with both the OpenLearn project team as well as with selected parts of the wider OpenLearn community. This ROLE test-bed will measure some of the expectations, perceived benefits and difficulties of implementing a PLE in this environment. Thus, in effect, enabling the assessment of the overall aim by measuring the transition from formal to informal learning as witnessed through OpenLearn staff and students.

This transition attempts to transform and improve the OpenLearn user's experience by enabling individuals to build and personalise their learning environment thus gaining more control over the potential manipulation and production of as well as use of OER study materials. In addition, the adoption of certain ROLE widgets in parts of the OpenLearn Moodle platform is offering further value to those users by supporting a stronger framework to foster particular communities. This presents an opportunity to individual informal learners to be part of a shared learning experience instead of their current potential lone study.

4. METHODOLOGY

Qualitative and quantitative data were collected through a number of different research instruments. Introductory workshops were organised presenting the basic scenario of a PLE to the audience, followed by an opportunity to experience using pre-selected ROLE tools implemented into a dedicated OpenLearn study unit. The underlying theme of the workshops was: "Finding and sharing OER", but the flexible nature of the embedded activity was such that individuals could tailor this theme to meet their own specific needs i.e. by choosing to look for or discover OER pertinent to their own subject areas. Two workshops were conducted using ROLE tools with two different groups, i.e. one with learners and one with educators. Collecting feedback from each group was organised through a survey. This generated both quantitative as well as qualitative data. Representatives from the ROLE project were present at each workshop to deliver information and to circulate during the hands-on part of the session. This was an



excellent opportunity to hear how individuals did or did not engage with the ROLE tools. It was a chance to collect some direct qualitative data through comments and feedback from participants.

The first workshop took place at the Joint European Summer School on Technology Enhanced Learning (JTEL) in Crete, May 2011. Participants were postgraduate students from universities across Europe. The JTEL summer school is an annual event and offers an opportunity for PhD students, in different subject areas, in TEL to meet, exchange knowledge and develop their research skills whilst engaging with the active TEL community of practice. The second workshop took place at The Open University, Milton Keynes, UK in July 2011. It was organised in conjunction with the Support Centre for Open Resources in Education (SCORE). SCORE offers a variety of support mechanisms to the OER community in England. The attending SCORE Teaching Fellows are appointed from a cross-section of English Higher Education Institutions (HEIs).

A similar but not identical, workshop format was used at each event. Whilst the workshop basis was the same (e.g. setting the scene, describing PLEs etc.), the hands-on materials and pre-selected ROLE tools were tailored for the different audiences. After a short introductory presentation about ROLE and PLEs a short question and answer session followed. The main hands-on section of the workshop was then delivered in the form of an activity. Essentially participants were asked to visit the dedicated OpenLearn webpage shown in Figure 1. This enabled the participants to access a group of pre-selected ROLE tools in the form of widgets.

Participants were asked to use the two pre-selected ROLE search widgets called Binocs and ObjectSpot. Engaging in this activity would enable them to find OER that would be suitable to support them in their respective research or teaching scenarios. A third widget, accessing an EtherPad, was also available for this activity and it enabled participants to report their findings in a collective electronic notepad format. At the end of each workshop, a group discussion was also held with the participants contributing about their experiences of using the ROLE tools. Finally, the participants were asked to answer a short online questionnaire (see <https://fit-bscw.fit.fraunhofer.de/pub/bscw.cgi/39223921> for further details).

5. RESULTS

The results of both workshops were, therefore, recorded in a number of formats: it is fair to say that primarily quantitative data was collected from the questionnaire whilst the majority of the qualitative data was collected in situ when facilitators circulated amongst the participants. Secondly, however, some supplementary qualitative data was also gathered electronically via the pre-selected ROLE tool that enabled participants to access the EtherPad and record their experiences as they happened. In general, some participants were comfortable with using the EtherPad whilst others were most definitely unable to grasp the concept or indeed use it effectively. It was for this reason that the facilitators at each workshop collated notes of what they observed and heard during each event.

Overall, the two events were deemed to be very successful. The introduction about the remit of PLEs set the scene and, additionally, participants appreciated the opportunity to use the selected ROLE tools thus the workshops were warmly received by both audiences.

The first event, as previously mentioned, took place during the JTEL summer school in Crete, May 2011. The audience comprised of PhD students all of whom were aged between 21 and 40. There was an even



split between the genders. Most participants declared that they had a good knowledge of TEL (73%) whilst the majority also indicated that they had “some” knowledge of OER (73%). The purpose of the workshop being that participants were encouraged to use the ROLE tools to seek out appropriate OER materials that would support them in their subject areas of research.

In general, the JTEL participants’ overall opinion of using the ROLE tools as part of the learning activity in the workshop was a positive one. Participants recorded in the free text responses of the questionnaire that their experiences of using the tools were “...useful, especially the search widgets” along with “LOVED THEM!!! I found them really useful both for search and collaboration” and “a great idea”. With relation to a PLE scenario, the responses were much more mixed. Interestingly, the groups’ strongest opinion related to the statement “Using a PLE would improve my motivation for learning” where some 57% registered a neutral response to this premise. Other strong opinions were also voiced in respect of the statements “I would find a PLE useful for my work” where some 52% agreed with 21% strongly agreeing and “I would find interacting with a PLE requires a lot of mental effort” invited a 52% disagreement to be recorded. This would suggest that many of the participants recognised that using a PLE required some effort initially along with a discerning thought process but such effort would offer individuals greater benefits in the long run.

Participants were also invited to record their opinions related to comments or questions for improving the ROLE tools. Significantly fewer responses were recorded in response to this invitation (50% of group total). It is not clear why this is so. Nonetheless, some useful ideas were recorded, such as “it would be useful that each resource had more indications about how rich it is. Not only number of comments, but also links, embedded content etc.” In other words, the participant recognised the value of the ROLE tool for his/her research work and wanted more relevant information to be displayed once a search query had completed i.e. that materials were situated in a wider context (in this case in relation to OER subject matters).

The second workshop took place with an audience of educators whose age profile was somewhat in contrast to the JTEL Summer School. The majority were SCORE Teaching Fellows who were aged 30-50 with a 60:40% female:male division. Their knowledge of TEL also invited a wider range of responses in that 30% recorded themselves as “experts” with 40% stating “good knowledge” alongside 30% saying that they had “some knowledge”. They also recorded an identical response in respect of their OER knowledge. Once again the purpose of the workshop was that participants were encouraged to use the ROLE tools to seek out appropriate OER materials that would support them in their subject areas of either their Teaching Fellow or “normal” research.

In respect to the question “What did you think of the widgets of the learning activity?” the educator participants responded with an even split between positive and neutral comments such as “Good in principle, liked the ability to search file type. Needs wider range of search engines. Didn’t work properly on the iPad” as well as many responses of “useful/nice idea/worked well in general” in addition to “... but would be even better if the search results were filtered for Creative Commons licenced items” indicating that the educator recognised the potential of the search tool to be further refined.

There was a rather mixed response to the question “Your opinion of widget-based PLEs”, but overall many of the educators (ranging from 40-60%) registering that they were neutral in their opinion of the nine listed statements. Likewise, only 10-20% of participants registered either strongly agreed or disagreed views. For example, with respect to the statement “It would be easy for me to use a PLE”, some 40% of



the educators agreed but, as indicated earlier, another 40% held a neutral view of this statement alongside the remaining 20% registering that they disagreed.

The final survey question requested comments or suggestions for improving the ROLE widgets. In exactly the same way as the JTEL Summer school workshop, this invitation revealed a limited number of responses. They were, however, helpful in terms of feedback for the ROLE tool developers and ranged from “support or examples of good use would be helpful – the interface is not immediately intuitive” through “... the search needs to direct users towards OER repositories and/or Google results filtered by licence” to “the search results I got were not necessarily OER”. The latter suggesting that definitions of what is being searched for need to be clearer as well as pre-selecting the most appropriate search engines/repositories rather than a wider set of resources that seem to confuse some of the end users.

6. ACTIVITY

If you would like to try the ROLE widgets described in this chapter, then you may visit the ROLE online course available at <http://labspace.open.ac.uk/course/view.php?id=7433>. The course has been developed in OpenLearn as OER in order to introduce the main concepts and technologies behind ROLE. In this course, you can learn more about the ROLE widgets and use them within structured learning activities.

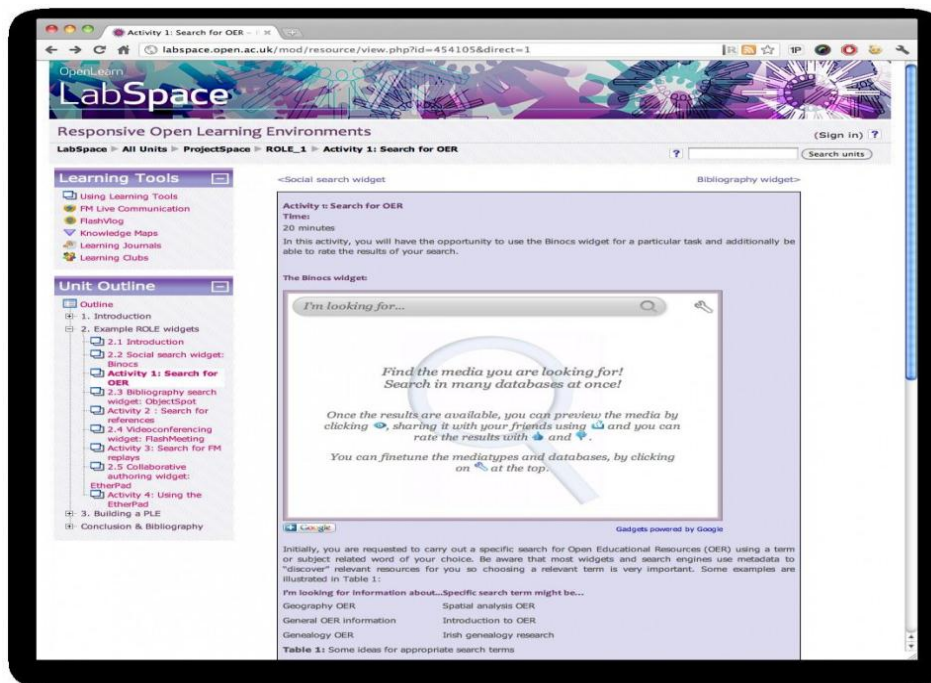


Figure 2: The ROLE online course

Author: Alexander Mikroyannidis and Teresa Connolly

Source: <http://labspace.open.ac.uk/course/view.php?id=7433>

Objectives: Introduce the ROLE concepts and technologies to a variety of audiences, including educators, learners, and researchers.

License: Creative Commons

Reference: Shared in OpenLearn and the ROLE project web site (<http://www.role-project.eu/>)



7. LESSONS LEARNED

The successful implementation of PLEs and their adoption by informal learners involve significant challenges, as shown by the OpenLearn case study. These challenges are related with the different levels of support required by the target audiences, as well as the overall quality of the offered educational tools and services.

In particular, the OpenLearn case study showed that informal learners are looking for accessible and easy to use learning tools, accompanied with introductory and guidance learning course materials. These tools also need to be easily customizable so that they can fit the learners' needs and goals. Informal learners want to be able to receive feedback about their learning progress, as well as provide feedback about the usefulness of the tools and their overall learning experience. Finally, fostering communities of learners that have common learning goals and are willing to engage with novel learning technologies is an essential element towards offering a shared learning experience to informal learners through PLEs.

Regarding the 3 key questions stated in the beginning of this chapter, we can summarise the following answers:

What is a widget?

- A widget is a micro-application, residing either on the web or on your computer desktop. You can use widgets and widget bundles to compose your PLE, thus aggregating resources for your own learning purposes.

What is a Personal Learning Environment (PLE)?

- A PLE is a facility that enables an individual to take control of his / her learning journey by accessing, aggregating, and sharing online learning tools and content.

How can a widget-based PLE enable the finding and sharing of OER?

- The ROLE project has developed a number of tools for performing these tasks within a PLE, in collaboration with other learners.
- The ROLE online course in OpenLearn (<http://labspace.open.ac.uk/course/view.php?id=7433>) introduces and explains the use of these tools.

8. CONCLUSION

This chapter has presented recent results from the work being undertaken within the ROLE project, regarding widget-based PLEs for finding and sharing OER. In particular, the widgets developed by ROLE were introduced, together with results from user evaluations. The ROLE widgets were piloted with two different audiences: students and teachers. The results from these pilots have provided us with an insight into the OER-related needs of these different stakeholder groups.

Future research will report on the findings from pilots and evaluations of a wider range of ROLE tools and services. In particular, tools and services for supporting teachers and students in becoming self-regulated are currently being developed in the project. The evaluation of these technologies by the relevant stakeholders will allow us to better comprehend the challenges associated with SRL.



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