

## GALICIAN TEACHERS' PERCEPTIONS ON THE USABILITY AND USEFULNESS OF THE ODS PORTAL

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**Abstract:** *The Open Discovery Space (ODS) project has among its objectives modernising school education, creating a pan European e-learning environment, promoting flexible and creative ways of learning, and improving the way educational content is produced, accessed, and delivered. The ODS portal is a key element towards those objectives; it is a community-oriented social platform where teachers, students, and parents can discover, adopt, and adapt educational resources on their areas of interest. This paper reports the evaluation results of the ODS portal; in particular those that have to do with its perceived usability and usefulness—gathered from an evaluation questionnaire that teachers of primary and secondary education filled up after an introductory workshop, which was conducted by the University of Vigo, involved in Working Package T12.4 (measuring use and usability of content and services).*

**Keywords:** *Open Discovery Space, Perception survey*

### 1. INTRODUCTION

Through the creative use of new technologies, effective content organization, and learning processes that respect local school problems, Open Discovery Space [1] tries to address the challenge of the “social appropriation of knowledge” by empowering all school audiences, but mainly teachers, pupils and parents. The approach to be followed contributes to the development of self-esteem, an increased “sense of belonging”, and an improved perception of one’s own capacity to solve problems and contribute to the “construction of the surrounding community”. These factors have been clearly related to the development of “social capital” and a greater degree of conviviality and peace. The school component and the community dimension of the project place an emphasis on developing certain key values and attitudes that play an important role in this process, such as the capacity of team work and a spirit of collaboration as a way of developing learning networks and communities. Consequently Open Discovery Space is promoting Open Education as key approach to opening up contents, learning and collaboration. The main outcome of this process will be the Open Discovery Space portal<sup>1</sup>: a community-oriented social platform where teachers, pupils and parents will be able to discover, acquire, discuss and adapt eLearning resources on their topics of interest.

Furthermore, the main aspect of Open Discovery Space project is innovation; in fact, it is bringing innovation to three key areas:

- Proposing innovative ways to encourage educational communities to use eLearning resources and exchange their experience and views on ease of use and quality of those resources.
- Proposing an innovative educational design and an educational metadata organization scheme. These measures will seek to exploit the elements of the learning context in eLearning resources (i.e., educational objectives, pedagogical models, learners’ personal characteristics and needs, etc.), as well as the teachers’ competence profiles (knowledge, skills and attitudes) making it possible to measure and assess the impact of eLearning resources ON schools both in terms of learning outcomes and learning activities.
- Proposing innovative solutions that could remove linguistic and cultural barriers, improving the ease of use in existing repositories in order to deliver relevant Learning Resources to teachers, students and parents more effectively.

In the other hand, this initiative was performed by a multidisciplinary consortium composed of a varied group of universities (e.g. University of Vigo, Oslo and Akershus University College of Applied Sciences, Open University of Nederland, etc.), governmental organizations, international institutions (e.g. UNESCO - Italy) and technological groups (e.g. Greek Research and Technology Network S.A., Institute TELECOM, Centre for Research and Technology HELLAS, etc.), being in total more than 50 partners.

Regarding with task assigned to University of Vigo is related with measuring use and usability from two levels, content and services. Therefore, the goal of this task (i.e. T12.4 according planning work) is to systematically and iteratively test usefulness and usability of the system

<sup>1</sup> <http://portal.opendiscovery.space.eu/>

through a panel including selected representatives of end-users and intermediaries. Methodologically, the usability evaluation would be conducted as a streamlined cognitive walkthrough. This and alternative inspection methods are more efficient and have been shown to be as effective as more expensive laboratory-based experiments (eye-tracker, camera-based observation with think-aloud). The main focus of the validation study is to assess whether the proposed system operates under the same influences of technology acceptance as traditional desktop interactive systems. In identifying the total explanatory power of the model and proportional influences for the key factors of perceived ease of use and usefulness, implications can be drawn with respect to design and evaluation of such systems.

As a conclusion, upon the completion of this project, around April 2015, it will have contributed to the modernisation of school education, supported stakeholders in acquiring digital competences, stimulated demand for innovative eLearning resources and engaged teachers and pupils in the development of innovative educational practices. Crucially, this project will strengthen European integration by increasing cooperation across state borders, bringing together different cultures and supporting multi-lingual practices.

## 2. THE OPEN DISCOVERY SPACE PORTAL

To support the optimisation of the eLearning resources and the development of strong and self-sustained communities of implementation the project aims to deliver a European-wide, socially-powered, multilingual Web Portal that will allow teachers, students and parents to intuitively discover, acquire, share, discuss, reuse and revise digital educational resources that are available through an Advanced Learning Technological infrastructure.

The Open Discovery Space Portal will act as a laboratory of ideas, a standard setter, a capacity builder for the community and a catalyst for international cooperation between the distributed user communities, in particular users with an active role in education field. Actually this portal is commonly referred as “A community for Teachers by Teachers”. In figures ODS Portal, at the time of writing this article, contains 563257 Educational Resources Available, 1322 Connected Teachers, and Teacher Communities 172.

Consequently, the ODS Portal [2] provides the following functionalities in order to get the goals mentioned in last paragraphs:

- JOIN AN ODS COMMUNITY.** To become a member of an ODS community, user have first to be a registered user of the ODS Portal. So that, through this functionality user can: i) Find a Community; ii) Become member of a Community and iii) Management all communities that user is member or creator. In Figure 1 below is illustrated an example of this area of the ODS Portal.
- CREATE NEW COMMUNITY.** In ODS Portal a new community can be created as an independent community or as a “child” community of another one. Consequently, user can carry out this functionality by means of several options: i) Create a “child” Community (i.e. in this case, user has first to be member of the “parent” community in order to have the privilege to create a new one under this); ii) Create an independent Community; iii) Administration of the community after approval; and finally iv) Admin member requests.
- CREATE EDUCATIONAL CONTENT IN A COMMUNITY.** This is one of the most relevant aspects of the ODS Portal, because allows user create his/her own content into a Community that he/she is member by selecting one of the three options: i) Create Educational Content, ii) Create Lesson Plans and iii) Create Learning Scenarios. Each one of these options will lead user to a new page that includes all content created into this Community by all members and also provides him/her the possibility to create new content.
- ORGANIZE YOUR COMMUNITY.** User’s ODS Portal can organize his/her Community using the six main modules that this can include: i) Groups, ii) Activities, iii) Events, iv) Blogs, v) Discussions and vi) Polls.

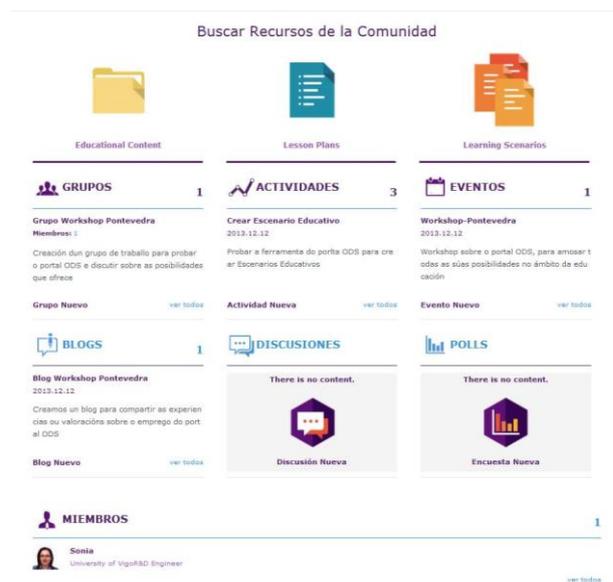


Figure 1: Capture about an ODS Community created in Workshop – Pontevedra (12/12/2013)

As a final conclusion, it is noteworthy that the ODS Portal includes components that allow communities of implementation to easily set up and deploy their own lightweight portal versions, commonly known as My Discovery Space, that be fit to their community needs (e.g. thematic or linguistic). Indeed, the My Discovery Space sites could popularize and promote the effective use of digital resources, introduce freely available technologies and software, and share good practice, as well as practical information on how to set up new eLearning initiatives and how to attract more users. Therefore the ODS Portal provides an opportunity to test the infrastructure and the methods in the local setting, could promote acceptance of the proposed approach by even the most traditional institutions and could help to break down barriers to knowledge sharing, promoting a truly Open Access to Learning.

### 3. TESTING THE USABILITY OF THE ODS PORTAL

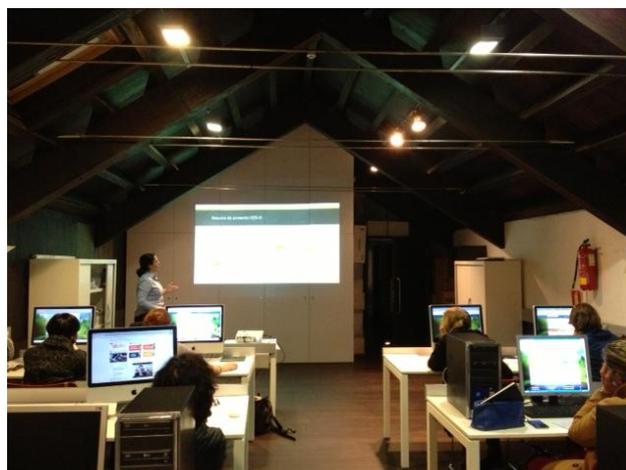
The task of testing the usability of the ODS portal was carried out by a multidisciplinary team of researchers from the areas of Information and Communication Technologies and Pedagogy. Besides, the process of measuring the use of that technological tool—both of contents and available services—was directed by the e-learning group from University of Vigo. Overall, the team counted with experts on technology plus experts on pedagogy. Both aspects—tecnology and pedagogy—were taken into account when designing the study and analysing the results obtained.

Research was structured in accordance with the following stages:

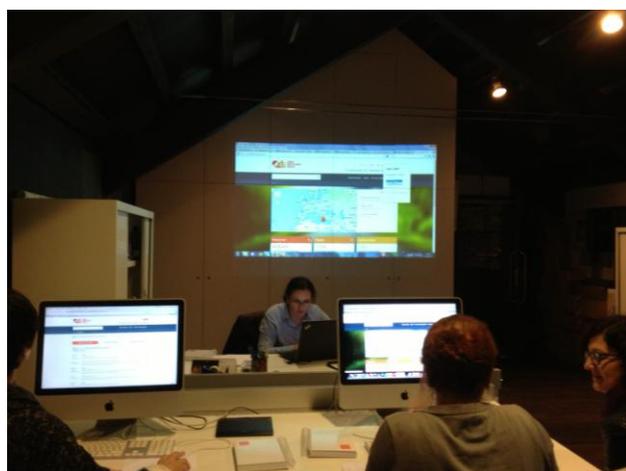
- Identification of the most representative services in the portal, from the point of view of teaching.
- Definition of a set of proper indicators for representing the real perception of users on the value of the ODS portal for providing access to Open Educational Resources.
- Definition of the surveys for capturing the perception of users, in accordance with the identified services and indicators. This definition was performed by another working package. Two surveys were defined: one for capturing the immediate perception of users, and another one for capturing their perception after several weeks using the portal.
- Plannification of the workshop by assigning tasks to field technicians and by performing the temporal planning of the workshop in two face-to-face sessions.
- Filling up of the paper questionnaires during the workshops. Online versions of the questionnaires were also available [3], [4].
- Analysing data, and sharing results with the rest of the ODS consortium.



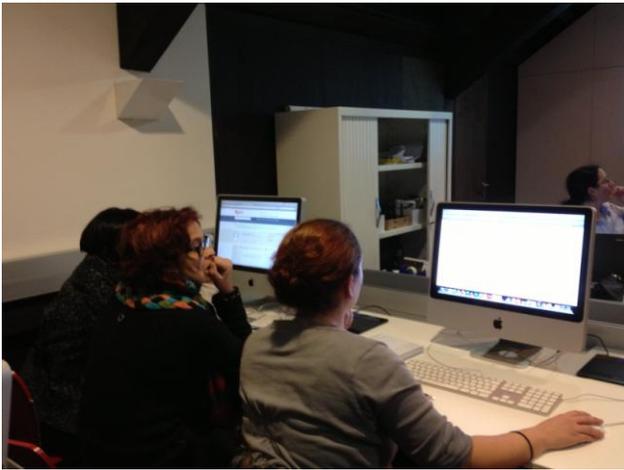
**Image 1:** Participants were teachers of primary and secondary education.



**Image 2:** Introducing the ODS portal to teachers.



**Image 3:** The workshop was conducted in a very guided way—step by step.



**Image 4:** Teachers interacting with the ODS portal and performing the assignments.



**Image 5:** Teachers filling up the paper questionnaire.

### 3. RESULTS AND CONCLUSIONS

Validation of the usability of the ODS portal was performed during two workshops that took place in Pontevedra, Spain between 12th December, 2013 and 31st January, 2014 at the facilities of University of Vigo. The first workshop included a brief course to teachers on the functionalities and aims of the ODS portal and an assessment survey [3]. The second workshop was devoted to answer the questions posed by the teachers participating after a 6-week period of usage and reflection. Again, the workshop was completed with an assessment survey on the ODS portal [4].

As pointed out at the beginning of this paper, the main objective of this work was to find out which was the perception of teachers on the usage of the ODS portal, and how teachers assess the impact of the ODS portal on the provision of digital educational content to be used in learning processes. From the results obtained during both assessment sessions we can drive the conclusions below.

First, 66.67% of participating teachers (incidentally, 100% of participants were a group of nine female teachers) declared that they agree on the use of portals offering educational content and services online. This interest is

confirmed by the positive assessment of ICT integration in their educational institutions. More than 57% insist in the pertinence of such integration.

Another relevant aspect of this study is related to the perception on how the ODS Portal will enhance their work as teachers. As shown in Figures 6 & 7, 44% consider during first workshop that it may be integrated in their actual educational curriculum, but after some weeks of usage and reflection this percent increased up to 55,55%, and 77% consider that its introduction would improve the educational experience of their students. It is also noteworthy that after the second workshop the perception of the ODS Portal being very useful to communicate with others increased by over 11%. These results also show the proactiveness of teachers for these kind of solutions, and also the positive perception on the impact of educational resources in their teaching activities and in the learning processes of their students.

With respect to the overall perception on the ODS portal, the result obtained show that more than 44% claim that they agree with the innovative character of the portal, while more than 33% consider the ODS portal to be easy to use. Besides, 100% of participants consider very relevant to have a version of the digital educational resources available in their native languages, and finally more than 55% see as a motivating challenge to use educational resources produced in other countries.

Collected data on the participating teachers's perceptions on how their institutions and especially their peers respond to this new educational trend around open educational resources is discussed below. At least 66.67% of participating teachers perceive a positive acceptance both of these resources and the services provided by the educational tools tested. Besides, 55.56% consider that the institution in which they develop their teaching activities encourages ICT-based learning, and 44.44% think that their host institutions valued the efforts made by the teachers in creating open educational resources.

It is important to highlight the impact of previous training, that is, the time passed from the first workshop, implying weeks of reflection & usage before the second one took place. In particular, the 66,66% of participants consider that it was important for their awareness and knowledge on repositories and the 77,78% for their awareness and knowledge on ICT usage in their work.

Finally, free-text perceptions were also collected on usability and those usability aspects that they believed should be improved in the ODS website. In this regard, it should be noted that the data obtained was very consistent with a workshop held in Greenland [5] within the ODS validation process carried out in different European countries. Participating teachers in both Spain (Pontevedra) and Greenland requested some improvements in ODS website affecting i) the registration process, ii) language management, iii) processing speed and iv) fill-in forms to collect teachers' data, and v) educational resources provided by teachers.

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