



A Case Study of Teachers' Open Educational Practices

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This article presents an exploratory study of the digital practices used by teacher educators regarding Open Educational Resources and Open Educational Practices. Despite the growing diffusion of OER repositories, the results of this research reveal that teachers' practices are still tied to traditional models, and that they are only slightly open to the sharing and reusing of digital materials and to the employment of open license resources in the manner made available by web 2.0.

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1 Open educational resources and open educational practice

The concepts underlying the definition of Open Educational Resources (OER) are the sharing and reusing of digital materials, created within a community of practice of teachers and students in accordance with the aims of the open access movement. As Masterman and Wild (2011) observe, these concepts, in reality, are not new: OER can be seen as the last in a series of initiatives that favour open pedagogical practices. These include the reutilisation of digital educational resources generally (McNaught, 2003; Malcolm, 2005), both manufactured products and those that are created specifically as reusable learning objects (Reusable Learning Objects, RLO, Boyle, 2003; Muzio *et al.*, 2002) with particular learning designs in mind (Conole, 2009; Lane & McAndrew, 2010).

As noted by Lane and McAndrew (2010), there are similarities between OER and RLO: both possess such characteristics as accessibility, availability, granularity and reusability; and they share the challenge of large-scale (re)-utilisation. Nonetheless OER, by contrast with RLO, seems to be more closely tied to the recent open practice of sharing by means of the social aspect of Web 2.0, in as far as this is reliant on technological developments capable of sustaining an informal community that shares and reuses materials characterised by open licenses (CCL, Creative Common License). As regards learning design, Lane and McAndrew (2010) suggest that the benefits of OER reside in rendering the shared practices among teachers more visible and transparent. In fact, at the technological level it is possible to verify modifications of the resources produced by the end-users, in any moment and by any members of the community.

In order to understand the new educational practices, it is important to shift attention from research into the resources themselves (OER) towards the practices connected with the creation, utilisation and management of OER, defined as Open Educational Practices (OEP) (Conole, 2010). This focusing on open educational practices was explored in depth by the Open University project, Initiative Quality Education (OPAL, 2010). The definition of OEP proposed by the Open University project is as follows: *'The vision of open educational practice includes a move from a resource based learning and outcomes based assessment, to a learning process in which social processes, validation and reflection are at the heart of education, and learners become experts in judging, reflection, innovation within a domain and navigation through domain knowledge'* (OPAL, 2010, p. 46). This definition was lightly revised in a succeeding publications: *'a collaborative practice in which resources are shared by making them openly available, and pedagogical practices are employed which rely on social interaction, knowledge creation, peerlearning and shared*

learning practices' (OPAL, 2011a: p. 4), [with] *'the intent to improve quality and innovate education'* (OPAL, 2011b: p. 4).

2 Barriers against OER and OEP

Nonetheless, although the advantages of using OER have been recognised (OECD, 2007a; Atkins *et al.*, 2007; Yuan *et al.*, 2008; McGill *et al.*, 2008; McAndrew & Lane, 2010) and numerous initiatives have been undertaken (among the most noted: Open CourseWare Initiative del MIT, Vale and Long, 2003 and MIT, 2006; the Canadian project MERLOT, Carey & Hanley, 2008; the project Open Learning of the Open University (UK) McAndrew & Lane, 2010; the project International Institute for Educational Planning (IIEP) UNESCO, 2005), a combination of factors remains which still appears to impede the dissemination of OER and, consequently, its practice (OEP) is still considered innovative for teachers.

In particular, OLCOS (Guntram, 2007) and OECD (2007a; 2007b) have conducted a series of wide-ranging studies to individuate the factors that inhibit the diffusion of OER. The principle barriers, according to their research, are:

- technology: that is, the absence of broadband, internet access facilities and/or software for the creation, sharing and housing of content;
- financial: insufficient investment in hardware and software necessary for developing and maintaining OER projects and repository;
- social and cultural: an absence of the digital competence that would enable the passing from consumer to prosumer of web 2.0, to which one might add the lack of a culture of sharing typical of the open access movement and OER;
- political and legal: the existence of editorial policies and legal regulations that hinder the open content movement.

To these inhibitory factors, it is necessary to add some pedagogical barriers which have not received sufficient attention. Notwithstanding the increasing spread of OER repositories, this phenomenon in itself has not produced a significant increase in OER utilisation on the part of teachers nor relevant changes in their teaching practices (Margaryan *et al.*, 2008; Charleworth *et al.*, 2007, Littlejohn, 2011). One might also observe that *'Pedagogical models are often not even considered in the discussion of OER. The reasons for this are manifold: for example, given UNESCO's goal of fostering free availability of teaching and learning content and tools for developing countries, the educational paradigm must seem of only secondary importance. Another reason is that the discussion of OER has often been dominated by technical and management considerations rather than the perspectives of educational practitioners. And*

still another reason for a narrow understanding of OER is the focus of many discussions on issues of appropriate licensing schemes' (Guntram, 2007). Moreover: 'This has to do with the fact that the current focus in OER is mainly put on building more access to digital content. There is little consideration of whether this will support educational practices, promote quality and innovation in teaching and learning. To provide educational opportunities for all citizens we suggest therefore, extending the focus beyond "access" to "innovative open educational practices (OEP)' (OPAL, 2011).

This article presents results of a study into teachers' practices in relation to open digital resources, carried out in 2008 and 2009 as part of the European project Share.TEC. Share.TEC is an OER repository dedicated to Teacher Educators (TE), which was realized within the ambit of the homonymous project, which had as its objective the development of an improved access system for the recovery and sharing of pedagogical materials for TE at the European level (Alvino *et al.*, 2009; Rodriguez *et al.*, 2009; Stefanov *et al.*, 2011). This system is based on an extendable set of collections of open educational resources (OER) and commercial publications; it furnishes a gateway to a critical mass of digital contents custom-made to be used by teacher educators.

This article seeks to explore the existing gap between open practices such as those which are supported by the OER movement and traditional practices, through analysis of data that has been collected by the author on the behaviours and techniques of teacher educators..

3 The research context

A central question for the Share.TEC research project was to determine the real needs of the end users of the educational repository which it was constructing.

This aspect of the work was resolved in two stages:

1. From the technological standpoint, through the creation of a model and system of validation, field testing, analysis of feedback, and tuning of the system with the assistance of end users throughout the development of the project. This work allowed the identification of the factors that would be required to make the end users' activity simple and intuitive.
2. From the pedagogical standpoint, through an inquiry aimed at understanding the pre-existing practices of TE in relation to digital materials seen from the perspective of Web 2.0.

The necessity of inquiring into the pedagogical practices of TE was dictated

by the fact that as Share.TEC was meant to be the prototype of an innovative OER system, it had not only to confront the “technical” aspects of access to information (which was clearly necessary), but it had also to take account the existing habits and practices of end users, given that the latter would “populate and animate” the system itself. In fact, one could construct excellent repositories, which would remain solely as “cathedrals in the desert” if they were not employed daily by a critical mass of users who upload materials into the system and also make use of them, sharing and modifying digital materials, through open licenses. It is necessary to highlight that there exists behind every pedagogical practice an educational model: in fact, the simple employment of digital materials does not, in itself, imply that at bottom there has been a change in the educational paradigm, as it is possible to utilise them simply as a substitute for printed materials that are based on an educational model centred on the teacher that “gives lessons”, rather than on the group that learns together by collaboration.

4 Research methods and variables

To explore the practices of TE, two areas of investigation were pursued (Banzato, 2012): 1) identification of the use of open digital resources by TE in their leisure time and at work, in order to assess the potentiality of their making use of OER (*Ibidem*); 2) extrapolation from the previous work (1) directed at identifying professional practices and customs which would be relevant to the use, creation and sharing of certain types of open digital resources which we will present below. The two areas are complementary in that they offer the possibility of investigating aspects of formal and informal learning in the current transitional phase between the practices of web 1.0 and web 2.0, together with other aspects of professional practice.

The following variables which relate to the practice of professional TE were taken into consideration in this inquiry (*Ibidem*):

1. *The use of open practices in leisure time*: that is, to explore how TE participate, communicate and produce digital materials in the web 2.0 environment.
2. *Practices that employ cloud computing*: to investigate memory systems used by TE to save digital materials, in particular through systems of cloud computing. This is essential because OER systems depend on the uploading of digital materials by TE.
3. *Practices of on-line communities*: to determine if TE already participate in national or international on-line communities. This is of strategic importance as it is not enough simply to fill an OER repository with digital materials: for the system “to live” it needs to be activated by

constant TE participation, communication and sharing, as happens in a “real” practicing community.

4. *Open practices that (re)utilise digital educational materials*: to discover the extent to which TE are willing to put their own teaching materials at the disposition of other TE and to (re)utilise those created by their colleagues. And to determine how much faith TE are willing to place in sharing, within the context of the philosophy of OER, digital resources produced by other TE.
5. *The use of creative common licences (CCL)*: without regard to their practice, to determine the extent of TE’s knowledge of CCL, and based on this data, to inquire of TE if they made use of them.

This study was based on a combination of qualitative and quantitative research methodologies with the intention of identifying the key dimensions in the profile of TE and their requirements with respect to information available in web 2.0. In the first instance, in order to explore the profile of TE, a focus group was chosen as a method by which data could be collected. Through this methodology it was possible to explore the understandings and attitudes of those participants who had agreed to help us develop insights which were then used to create a questionnaire. The focus group teachers’ discussions were recorded, which allowed subsequent analysis of their interactions, and data reduction into categories through the rearrangement of their responses. Five variables were isolated from the categories, and these were used to define items in the questionnaire (a combination of yes or no questions, multiple choices and open-ended questions) that best allowed collection of data. Following evaluation and approval by the Share.TEC consortium, the questionnaire was made available online to TE, who had previously been contacted by email, as an interactive web page.

It is important to note that this study did not attempt to provide a comprehensive assessment of the practices of a population of TE, but was rather an exploratory study of a representative sample of users which could give significant indications of current online educational activities and suggest openings for further research into the topic. The results outlined below were obtained by the structured analysis of some of data furnished by the questionnaire. Through the interpretation of these results, it is possible to obtain a cross-section of the practices of this sample of teacher educators.

5 Analysis of the results

The study was conducted on a sample of 176 Italian teacher educators (88 male and 88 female) who had taught both in initial education and in service

for teachers. The average age of the sample was 54.7 years, with a standard deviation of 8 points. The sample comprised an average experience of 8.7 years for the female and 6.9 years for the male teachers, with 7.8 years as the total average. There was a slight predominance of university professors at 52.27% (92) over high school teachers at 47.73% (84). Teacher educators for the humanities were 43.18% (76) female, and 34.09% (60) male; for the sciences, 9.09% (16) female, and 13.64% (24) male. In the total sample, there is a clear majority from the humanities, 77.27% (136) compared to those from the sciences, 22.73% (40). We report here only those results which bear on the area under investigation (see previous section).

The results demonstrate that TE would seem to find themselves in a transitional phase between traditional practices (as consumers of digitalized information) and open practices (those of prosumers of user created content in digital form). These results are tabulated below:

1. *The use of open practices in leisure time*: the process of “opening up” to new web 2.0 environments is detectable in the leisure time practices of TE: 59.09% of the total (104) participate in a social network (31.82% female and 27.27% male). 40.91% (72) of TE participate mainly through written material shared by post, while only 22.73% produce digital materials, such as still images, video and audio.
2. *Practices that employ cloud computing*: Systems that store digital materials also reflect habits carried over from web 1.0: 93.18% (164) of TE download materials to their own computer, while the possibility of saving them through cloud computing, in an online space shared with others, is used by only 4.55% (8), of whom 2.27% (4) uses Google Docs to save materials in text format to share with their students.
3. *Practices of online communities*: Participation in communities of practice in national web 2.0 environments is not widespread in the sample of users: only 9.09% of females (16) and 4.55% of males (8); and even this small number collapses to only 2.27% (4) of the sample when participation in international communities is assessed. Knowledge of a foreign language would not seem to affect decisively participation in international communities of practice: in fact, correlating this data with that collected regarding the search for information in foreign languages, we find that 59.09% (104) search mainly in their native language, while 40.01% (72) carry out research in another language (English, French and Spanish). Other interesting data can be extrapolated as to how TE seek information: 77.27% (136) – of which 40.91% are female and 36.36% male – rely on traditional tools such as Google, while most seem completely ignorant of both national and international OER repositories (0.00% female, male 2.27 usage of each). Other international

information services appear to be little used, for example: Google Book (29.55%, or 52 TE, of which 13.64% are female and 15.91% male) or Google Scholar (13.64%, or 24 TE, of which 4.55% are female and 9.09% males). Web 2.0 social networks (such as Facebook, Delicious, blogs, wikis, etc.) also appear to be little used to find information, with only 6.82% (12) reporting their use of them.

4. *Open practices that (re)utilise digital educational materials.* In response to a specific request regarding their willingness to publish their educational resources in an open and shared OER repository dedicated to TE, the answers reflected the habits recorded in the preceding questions: 18.18% (32) would provide their digital materials without restrictions; the 52.27% (92) would upload their materials but with restrictions regarding writing and recording; and finally 29.55% (52) would not put their own resources at the disposition of others.
5. *The use of creative common licences (CCL).* Finally, the ethical use of online information, which is to say knowledge of Creative Common Licence (CCL), seems to be another obstacle to overcome. 81, 82% (144) of the total TE declared that they knew about the existence of CCL but had never used them; 6.5% (12) reported knowing nothing of them; and the rest did not respond). When asked if they have used different forms of CCL, 98% said that they have never used them, because their university or publishers have protected their materials.

Discussion and conclusions

Although the results of this study provide a map of only some TE practices, but one can say that the members of this sample are in an early phase of the transition from traditional to open practices. A number of obstacles were revealed which could be overcome by a commitment from higher education institutions and/or those institutions responsible for initial and continuous training of teachers to support the deployment of OER, combined with a joint development of informal communities of TE, teachers and students. In fact, as recorded in the study of OER by Share.TEC (*Ibidem*), it seems that TE prefer to 'confine' the materials they produce only to institutional platforms (in accordance with the traditional view of the practices of teaching and learning) as required by their institutions, rather than implement a policy of incentives for TE, teachers and researchers to develop and share OER.

As was noted by the OECD (2007a): *'There seems to be a paradox within the academic community which strongly emphasises the importance of openly sharing research results and building on existing scientific data, but at the same time often takes an unresponsive attitude towards sharing or using educational*

resources developed by someone else'.

The study found that many TE use digital materials to develop new ideas for teaching and for further study, but most of them usually do not share these resources and the modifications that they make to them with their colleagues. A substantial number of the sample is not disposed to make digital contents available outside the institutional e-learning platforms (since these are protected areas with copyright) and are foreign to the philosophy of sharing Web 2.0, since it is not supported by the policies of local institutions and does not seem to provide sustainable economic models. In this regard, the OECD (2007a) states that there is a '*need to look for new business models, new ways of making revenue*'. As a result of globalization, which has increased competition among educational institutions, it is necessary to find new sustainable economic models which do not undermine the basic mission of educational institutions (research and training for the common good) and protects those fundamental underlying values for the benefit of the whole society.

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