Editorial policies

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The aim of Open Praxis is to provide a forum for global collaboration and discussion of issues in the practice of distance and e-learning.

Open Praxis welcomes contributions which demonstrate creative and innovative research, and which highlight challenges, lessons and achievements in the practice of distance and e-learning from all over the world.

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Editorial

Inés Gil-Jaurena
Editor for Open Praxis. Universidad Nacional de Educación a Distancia—UNED (Spain)

After the publication in January 2013 of our first issue in the new stage of Open Praxis, once relaunched as a scientific peer-reviewed journal, the second issue comes out with contributions from different regions and institutions and with diverse visions, topics and concerns.

This open issue includes research and innovative practice articles, as well as a software review, from academics who have addressed the general call for papers, that presents Open Praxis as an open forum for global collaboration and discussion of issues in the practice of distance and e-learning, focusing on research and innovation on open education and learning.

Three of the papers recover the special topic of our previous issue -openness in higher education- addressing openness in general or open educational resources (OERs) in particular. Other topics relate to resistance factors to technology, communities of inquiry and networked curricula.

In the first paper, Igor Lesko (The Use and Production of OER & OCW in Teaching in South African Higher Education Institutions. Case Study), from the OCW Consortium, presents a case study developed in South Africa. Through survey methodology, the paper shows results about both the use of OER & OCW (type of resources, reasons for use, etc.) and the production of these kind of educational resources, including challenges for both actions. Respondents’ quotations are cited in order to enrich the analysis. The paper concludes with a set of valuable recommendations for the promotion of OER & OCW.

Approaching the production of OER based courseware, Pradeep Kumar Misra (Pedagogical quality enrichment in OER based courseware: Guiding principles) deals with quality issues from a pedagogical perspective. His paper focuses in presenting a set of principles to consider in the different stages in the production of these resources: planning, preparation, instructional design, development and presentation. The recommendations aim to help producers of OER-based courseware to make them more useful and meaningful for schooling and learning purposes.

Closing this section of papers focused on openness, Maria Fe Villamejor-Mendoza (The Openness of the University of the Philippines Open University: Issues and Prospects) presents the case of this university, where she has used a survey among faculty members to check the status of openness. Covering aspects such as open admissions, open curricula or OER, she analyses to what extent openness has permeated through the UPOU. She also comments what challenges and prospects the University of the Philippines Open University faces to become a truly open university.

Covering a different topic, Sofia Matrosova Khalil (From Resistance to Acceptance and Use of Technology in Academia) presents a theoretical review of previous studies to analyze the phenomenon of faculty resistance to technology. Derived from her doctoral dissertation, the paper collects different factors of resistance identified by researchers and builds upon different theoretical frameworks. It aims to have a practical application in the identification of the factors present in particular cases, and encourages to view resistance as a multidimensional attitude towards change to be addressed from different perspectives, both organizational and individual.

Closing the research articles section, José António Moreira, António Gomes Ferreira and Ana Cristina Almeida (Comparing communities of inquiry of Portuguese higher education students: one for all or one for each?) apply the Community of Inquiry (CoI) framework in a study developed in Portugal, using a survey methodology, with polytechnic and university students in blended online...
courses. They present different analysis, mainly quantitative, to reach cautious and interesting conclusions about the participant students and about the Community of Inquiry model itself.

In the innovative practice articles section of the journal, María Luz Cacheiro-González, Patricia Mata-Beníto and George Ubachs (*Networked curricula: fostering transnational partnership in open and distance learning*), talk about the NetCU project, financed by the European Commission Lifelong Learning Programme and coordinated by EADTU. Among other aspects, they present the products developed in the project: a handbook, a compendium of showcases and an ICT toolbox, with the purpose of helping universities to promote transnational networked curricula using ICT.

Finally, Mandar Lakshmikant Bhanushe (*Review of A-VIEW 3.5 software*) presents A-VIEW (Amrita Virtual Interactive e-learning World), a software developed in India. He examines, from the point of view of a presenter and learner, various features of A-VIEW as a virtual classroom.

Our wish in the journal is that the range of topics covered in this open issue contributes to reflection, debate and improvement of practices on open and distance education.

Special thanks from *Open Praxis* to the authors and to the reviewers who have collaborated in this issue.
The use and production of OER & OCW in teaching in South African higher education institutions

Case Study

Igor Lesko
OpenCourseWare Consortium (South Africa)

Abstract

With thousands of materials having been produced and shared openly and freely on the Internet as Open Educational Resources (OER) or OpenCourseWare (OCW), the focus of the Open Education movement has shifted toward the need to demonstrate how such materials are being used, by whom and with what impact.

This paper reports on the uses, the motivation for and perceived benefits of use, as well as the challenges of using or producing OER/OCW among academics at public Higher Education Institutions (HEIs) in South Africa (SA). Findings revealed widespread use of OER/OCW amongst respondents in their teaching endeavors, with a number of reported benefits. Findings also revealed respondents’ educational rationale for using or producing OER/OCW. Identified challenges to using or producing OER/OCW are related to licensing issues, institutional challenges or infrastructural problems. The paper proposes several recommendations to advance the use and production of OER/OCW in SA public higher education.

Keywords: Higher Education; OCW; OER; Open Education; Production; Teaching; Use

Introduction: Mapping the landscape of OER & OCW

More than a decade has passed since the Massachusetts Institute of Technology (MIT) made the announcement that they would make course materials from across their entire curriculum available online for free, under an open license, as OpenCourseWare (OCW). Subsequently, in 2002, UNESCO organized a meeting of prominent educators interested in the concept of opening up education, during which the delegates adopted the term Open Educational Resources (OER) (UNESCO, 2002). Since 2002, thousands of OER and OCW have been produced. They have been used by millions of people around the world. However, as we are moving towards the next decade in the Open Education movement, it is becoming increasingly important to demonstrate how such materials are being used, by whom and with what impact.

OER are commonly referred to as “digitized materials offered freely and openly for educators, students and self-learners to use and re-use for teaching, learning and research” (OECD, 2007, p. 30). OER refers to a range of learning objects, such as stand-alone video or audio materials, course or research materials, open textbooks, etc. OCW is a particular kind of OER, denoting courseware materials for a full course. OCW are a compilation of materials, openly licensed for reuse and modification, corresponding to a full course offered by the authoring faculty or institution (OCWC, n.d.). Both OER and OCW are licensed under conditions that permit their use, reuse, redistribution and/or adaptation.

Hundreds of organizations and HEIs have joined the Open Education movement during the past decade, making their materials available openly and freely online as OER or OCW. For instance, nearly 50,000 OER, available in numerous subject areas, can be located through OER Commons.
Furthermore, in 2008, the global OCW Consortium\(^5\) (OCWC) was established, which has since grown to incorporate more than 260 Higher Education Institutions and associated organizations from more than 30 different countries around the world\(^6\). To date, OCW Consortium members have published more than 30,000 OCW & OER (Graph 1) under open licenses, appearing in 22 different languages\(^7\). On average, 7 million people per year visited courses available through OCW Consortium members between the years 2008–2012 (OCWC, 2012a).

In Africa, the use and production of OER & OCW has been pioneered by organizations such as OER Africa together with numerous HEIs. In 2009, OER Africa\(^8\) in partnership with the University of Michigan initiated “Health OER\(^9\)” project with several universities from Africa. During this project, circa 150 learning modules together with numerous videos and open textbooks on health-related matters have been created collaboratively and released as OER. The resources available through this initiative have been accessed on average by 8,500 visitors per month from 190 countries, with the video collection available on YouTube having had 2.5 million views (Omollo, 2012). Furthermore, during its Multinational Project I, the African Virtual University (AVU), in partnership with 12 universities from 10 African countries, collaboratively developed 219 modules in Mathematics and Sciences; ICT Basic Skills; Teacher Education professional courses and integration of ICTs in Education. These courses are available openly and freely on AVU’s portal as well as on an external Scribd portal in English, Portuguese and French\(^10\). From December 2010 to August 2011, AVU’s open courses were cumulatively accessed by nearly 300,000 people from countries such as the United States, France, Portugal, Brazil and more. 50% of all the visitors were accessing materials in English, with 30 % in Portuguese and 15% in French (OCWC, 2011). Following the success of its Multinational Project I, AVU’s Multinational Project II has expanded into 21 African countries.

In South Africa, the University of the Western Cape\(^11\) and the University of Cape Town\(^12\) have been producing and sharing teaching resources as OER or OCW for several years. The University of South Africa has an OER portal\(^13\) and is one of the anchor partners of the OER University\(^14\).

With thousands of materials having been produced and shared openly and freely on the Internet as OER or OCW, the focus of the Open Education movement has shifted toward the need to demonstrate how such materials are being used, by whom and with what impact. It is in this context

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Graph 1: OCW Consortium Course Statistics (as reported by OCW Consortium members), October 2012

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With thousands of materials having been produced and shared openly and freely on the Internet as OER or OCW, the focus of the Open Education movement has shifted toward the need to demonstrate how such materials are being used, by whom and with what impact. It is in this context

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*Open Praxis*, vol. 5 issue 2, April–June 2013, pp. 103–121
that a number of evaluation studies have emerged in recent years. The findings from these studies revealed that OER & OCW had been used by numerous stakeholders. These include students, educators, self-learners, working professionals or life-long learners; variously using such materials to supplement their learning or teaching materials, as an indicator of existing course offerings in order to decide on a next course of higher education study, to create teaching materials, to update their knowledge or skills in the field, and more (Redd, 2011; Dopper, 2011; MIT OCW, 2011; Xanthopoylos, 2011). The OCW Consortium has been running a user feedback survey on its website since April 2011. Data gathered from 1037 respondents from over 80 countries revealed that nearly half of all the users (43%) are students currently undergoing secondary or university-level education. Self-learners represent 22% of all the respondents, followed by a group of working professionals (22%). Teachers and faculty members form 9% of all the respondents. Furthermore, in their responses to how they use OCW, amongst other forms of use, 20% of respondents indicated that they use OCW to supplement or create teaching materials (OCWC, 2012b). One of the key challenges in determining the impact of OER & OCW initiatives is related to obtaining feedback from users visiting OER & OCW websites. Keeping with the philosophy of open sharing, users can access OER & OCW materials without the need to log into specific websites. Such initiatives can only rely on voluntary feedback, and where the feedback is obtained, it does not guarantee a representative sample of users. Many OER & OCW initiatives therefore rely on website user statistics for data, documenting the number of downloads, time spent on websites or reporting users’ geographical location (Forward, 2012; OER infoKit, Learning and Teaching Considerations, 2011). Despite recent efforts to demonstrate their impact thus far, we only have a limited understanding about who is using materials, why they use it, and with what impact. These gaps include which materials are being used, re-used and/or adapted, which factors enable or hinder such practices, and more (Windle et al., 2010).

In the context of higher education in Africa, it has been argued that OER “have the potential to revive higher education standards, make curricula once more current and contextually relevant and to foster collaboration and knowledge sharing between institutions, all of which will in turn benefit the students” (Ngugi & Butcher, 2011, p. 3). Incorporating OER into teaching practices can have wide-ranging implications for the quality of teaching, quality of teaching materials, student engagement and more (Dhanarajan & Abeywardena, 2013). This paper reports on the uses, the motivation for and perceived benefits of use, as well as the challenges of using or producing OER/OCW among academics at public Higher Education Institutions in South Africa.

Methodology

As part of a project on *Emerging ICTs in Higher Education* in South Africa, a national survey was conducted in 2011 with academics and e-learning practitioners based at various public HEIs in SA. Respondents were probed about innovative teaching and learning practices using Information and Communication Technologies (ICTs) over the past 3 to 5 years. They were identified through purposive and snowball sampling methods. Purposive sampling method was applied in order to identify and recruit initial respondents. Identified respondents were then asked to help identify additional respondents thought to have been engaged in innovative teaching and learning practices using ICTs (snowball sampling method).

In the survey (Table 1), 120 respondents indicated that they used OER/OCW on a regular basis or at least once in 2011. A subsequent survey containing 26 questions (closed and open-ended) was developed in December 2011 and was piloted with several academics and practitioners in January 2012. The survey was subsequently amended, incorporating feedback and questions.
proposed by respondents during the pilot phase. During the period 15 February 2012–31 March 2012, the survey was distributed to 97 respondents who had agreed to be contacted for follow up questions. The questions in the survey were related to the following aspects:

- Characteristics of respondents
- Characteristics of OER & OCW materials used in teaching
- Ways of using OER & OCW in teaching, the impact of such practices on teaching methods and results, respondents’ rationale for using OER & OCW in teaching and engagement with production of OER & OCW
- Practices related to use of OA journals
- Respondents’ understanding of regulations (license terms) that govern ownership and use, reuse or modification of OER & OCW
- Challenges related to using or producing of OER & OCW

The findings reported on in this case study are a compilation of results obtained from the follow up survey. Due to the application of non-probability sampling methods (purposive and snowball) in the national survey, the results from this case study should not be generalized to provide a representative view of academics across higher education institutions in South Africa. However, many results from this case study, in general, resonate with results from recent international surveys on the OER use and production (see later), including factors that enable or inhibit such practices in higher education institutions. In this context, recommendations derived from this case study might find their applicability not only across higher educations institutions in South Africa but also beyond.

Survey responses were received from 48 individuals, representing 17 public HEIs in South Africa. Respondents hold appointments ranging from junior lecturers to professors to non-academic staff (Table 2).

Academic staff teach both undergraduate and postgraduate classes.

### The use of OER & OCW in teaching

The most frequently used OER in teaching (Graph 2) are video and audio lectures (47%) and graphs or data representations (47%). Lecture slides are used by 44% of respondents; followed by 40% of those who also use quizzes, exercises, assessment tools or worksheets released as OER. Full free courses have been used by 25% of respondents. A selection of respondents’ comments included:

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**Table 1: the use of OER/OCW in teaching in 2011**

<table>
<thead>
<tr>
<th>The use of OER/OCW in teaching in 2011</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>On a regular basis</td>
<td>62</td>
<td>24%</td>
</tr>
<tr>
<td>At least once in the past year</td>
<td>58</td>
<td>22%</td>
</tr>
<tr>
<td>Never</td>
<td>80</td>
<td>31%</td>
</tr>
<tr>
<td>I don’t know what you mean by this</td>
<td>3</td>
<td>1%</td>
</tr>
<tr>
<td>No answer</td>
<td>58</td>
<td>22%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>261</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

*Open Praxis, vol. 5 issue 2, April–June 2013, pp. 103–121*
Table 2: Level of Appointment

<table>
<thead>
<tr>
<th>Level of Appointment</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junior lecturer</td>
<td>2</td>
<td>4%</td>
</tr>
<tr>
<td>Lecturer</td>
<td>17</td>
<td>35%</td>
</tr>
<tr>
<td>Senior Lecturer</td>
<td>8</td>
<td>17%</td>
</tr>
<tr>
<td>Associate professor</td>
<td>7</td>
<td>15%</td>
</tr>
<tr>
<td>Professor</td>
<td>5</td>
<td>10%</td>
</tr>
<tr>
<td>Non-academic</td>
<td>6</td>
<td>13%</td>
</tr>
<tr>
<td>No answer</td>
<td>3</td>
<td>6%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>48</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Graph 2: Use of OER & OCW in Teaching.
Note: Respondents could choose more than one option so responses >100%

“I have been using materials from the MIT OCW site. I have been using slides, images and graphs related to Materials Science from a variety of sources on the Internet.”

“Lecture slides and exercises from MIT for a Data Communications course.”

“The team of librarians adapted the framework of an information literacy tutorial prepared by US library for our own use (with written permission). The online tutorial provided seven different modules, which covered the international standards for information literacy. The team adapted the content but re-used some of the quizzes. We wrote to ask another international library whether we might use a comic strip that illustrates academic honesty. This was used wholesale in our online tutorial.”
“I have used course notes. I have included images (pictures, graphs, applets) on occasion in my own 1st year lessons, which I have found on OER repositories. I have made available links to reputable looking courses for my senior students to consult as supplementary material.”

“I have used Creative Commons licensed presentations and YouTube videos, also free and open articles.”

“Most videos were either downloaded from YouTube or Vimeo or images from Flickr.”

“Presentations from SlideShare.”

“I found Business English courseware—from OUUK.”

“I have used Creative Commons licensed presentations and You Tube videos, also free and open articles. I have also been part of a course Community Self and Identity which has uploaded all the materials on OER Africa.”

The findings appear to suggest that various institutional OCW websites are preferred by respondents when trying to locate full courseware materials. On the contrary, SlideShare, YouTube, Vimeo, Flickr and various OER repositories appear to be used when looking for individual OER such as audio and video, images or presentation slides. It also appears that stand alone OER such as videos, audio, images or presentation slides are used more frequently than full courseware materials.

Respondents have identified images and video resources (42% and 42% respectively, Table 3) as the most useful OER in their classroom setting.

Images and video resources are followed by lecture slides (33%), tutorials and learning exercises (27%) and theoretical or conceptual explanations (23%).

**Reasons for using OER & OCW in teaching**

When asked about the reasons for using OER & OCW in teaching (Graph 3), 69% of respondents stated that they were making such materials available as additional resources to their students, followed by 56% of those who use OER or OCW to improve their knowledge in the field and 46% of those who include OER or OCW in their teaching materials or course syllabus. Of interest also is the fact that 33% of respondents have used such materials to help develop or revise the curriculum for their departments or schools.

**Table 3: The most useful OER in teaching.**

<table>
<thead>
<tr>
<th>Which OER/OCW do you find most useful in your classroom setting</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture slides</td>
<td>16</td>
<td>33%</td>
</tr>
<tr>
<td>Images</td>
<td>20</td>
<td>42%</td>
</tr>
<tr>
<td>Audio resources</td>
<td>7</td>
<td>15%</td>
</tr>
<tr>
<td>Video resources</td>
<td>20</td>
<td>42%</td>
</tr>
<tr>
<td>Theoretical or conceptual explanations</td>
<td>11</td>
<td>23%</td>
</tr>
<tr>
<td>Tutorials and learning exercises</td>
<td>13</td>
<td>27%</td>
</tr>
<tr>
<td>Assessment grids</td>
<td>6</td>
<td>13%</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>13%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>99</strong></td>
<td><strong>208%</strong></td>
</tr>
</tbody>
</table>

*Note: Respondents could choose more than one option so responses >100%*
Further investigation into the educational rationale for using OER in teaching and the ways such practices inform respondents’ educational practices elicited the following responses:

“I am experiencing a shocking level of ‘ability to study,’ ‘ability to critically assess materials’ etc, even at post-graduate level. Scarcity of resources in South African Education could at least partially be overcome by encouraging students to discover certain aspects of content for themselves.”

“It is important that I provide various avenues for participants to engage with the content material and add their own understanding and using OER/OCW helps me do that.”

“Student centered learning—the student is in charge of their studies and knowledge creation. To find knowledge and to create knowledge nowadays is so very easy. I am just the facilitator, students need to use all available information.”

“OER fits my philosophy of teaching and learning i.e. that knowledge is for the public good. Why should privileged people have more access? I believe in using interactive participatory approaches that empower students to find their content for learning then use the classroom for critical discussions. OER broadens the scope for learning. It offers students and teachers greater opportunities to do this.”

“Using these resources expands the dialogue within my discipline by connecting other disciplines and countries to my own context. This enables students to visualize their role in the international dialogue and evidence based practice.”

“Gleaning useful and credible information from the web is an important skill these days. As lecturers we need to do this ourselves and teach our students how to do so. When teaching undergraduates you are not re-inventing the wheel but you do need to add your own insight and personality to existing knowledge as you convey it to students. Students need to see you do this and the process of refining OER material is one helpful part of preparing for teaching.”

“The best reason to use OERs in South Africa is to share expertise with similar context, or to develop South African contexts for various educational resources, by using the best quality content from around SA, around Africa & the world.”
“Provides access to other ‘tested-out’ pedagogical practices. Also provides a ‘starting-point’ for new course development—see what is out there and adapt/change to fit my own teaching context.”

“I like to use a variety of information sources and get students to compare and critic content. They also need to know that information changes rapidly and they should be able to access it and use it appropriately.”

From further elaborations by respondents above it appears that their educational rationale for using OER & OCW in teaching is related, but not limited, to the following aspects:

- Because of scarcity of content in certain areas
- To enhance teaching practices—a variety of perspectives related to a specific subject matter
- To encourage supplemental independent learning and to develop critical thinking skills as well as digital literacies in order to find and evaluate appropriateness of online content
- Such materials save time to develop teaching materials
- To encourage a more learner-centered learning approach
- To share expertise in specific fields or because of respondents’ beliefs related to benefits of open sharing in education

**Reported benefits to using OER & OCW in teaching**

The findings revealed a number of reported benefits to using OER & OCW in teaching (Table 4). Among those, 52% stated that their classes are more interesting and/or engaging for their students, followed by those who state that they are able to improve their teaching materials (48%) or incorporate new concepts into their teaching (44%). Nearly 34% of respondents claim that OER & OCW help them save time preparing courses materials, and 31% state that they are more motivated to teach. 25% of the respondents stated that they have more content to teach with an equal number stating that they are able to use their class time more effectively for class discussions as a result of using OER or OCW.

These findings are consistent with results obtained from other studies where respondents reported enhanced quality of teaching and learning, development of critical and creative thinking skills or development of information literacy skills, ability to stay up to date with recent developments in their field, ability to save time to prepare teaching materials or ability to offer a range of different perspectives on a specific subject matter to be amongst the main benefits of using OER in teaching (Yuen & Wong, 2013; Daryono & Belawati, 2013).

In addition to using OER & OCW, 75% of respondents indicated that they had used Open Access (OA) journals in the past year (Table 5). Of these, 42% had used information obtained from OA journals for teaching and nearly 71% had used OA journals for research purposes.

The widespread use of OA journals for teaching or research amongst the respondents is encouraging. OA access journals facilitate the most up to date research outputs to be available and accessible without the barrier of high journal subscription fees. In this context, OA journals are an important component of an open education ecosystem.

**Production of OER & OCW**

In addition to using OER & OCW in their teaching, 33% of respondents stated that they have also produced or contributed to the production of OER or OCW (Table 6).
Table 4: Benefits of using OER in teaching.
Note: Respondents could choose more than one option so responses >100%

<table>
<thead>
<tr>
<th>Reported benefits of using OER &amp; OCW in teaching</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am more motivated to teach</td>
<td>15</td>
<td>31.25%</td>
</tr>
<tr>
<td>I am able to save time preparing course materials</td>
<td>16</td>
<td>33.33%</td>
</tr>
<tr>
<td>I am able to save time preparing to teach new subjects</td>
<td>9</td>
<td>18.75%</td>
</tr>
<tr>
<td>I have improved my lecture skills</td>
<td>8</td>
<td>16.67%</td>
</tr>
<tr>
<td>My classes are more interesting and/or engaging for my students</td>
<td>25</td>
<td>52.08%</td>
</tr>
<tr>
<td>My course evaluations are more positive</td>
<td>4</td>
<td>8.33%</td>
</tr>
<tr>
<td>My students get better grades</td>
<td>3</td>
<td>6.25%</td>
</tr>
<tr>
<td>I have more content to teach</td>
<td>12</td>
<td>25.00%</td>
</tr>
<tr>
<td>I am more able to use class time for discussion</td>
<td>12</td>
<td>25.00%</td>
</tr>
<tr>
<td>I am able to incorporate new concepts into my teaching</td>
<td>21</td>
<td>43.75%</td>
</tr>
<tr>
<td>I am able to improve my teaching materials</td>
<td>23</td>
<td>47.92%</td>
</tr>
<tr>
<td>OER/OCW have not discernibly impacted my teaching methods or results</td>
<td>1</td>
<td>2.08%</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>10.42%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>154</strong></td>
<td><strong>320.83%</strong></td>
</tr>
</tbody>
</table>

Table 5: Reasons for accessing OA journals.
Note: Respondents could choose more than one option responses >100%

<table>
<thead>
<tr>
<th>For which purpose (s) have you been accessing OA journals?</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>For teaching</td>
<td>20</td>
<td>42%</td>
</tr>
<tr>
<td>For research</td>
<td>34</td>
<td>68%</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>6%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>57</strong></td>
<td><strong>119%</strong></td>
</tr>
</tbody>
</table>

Table 6: Production of OER materials

<table>
<thead>
<tr>
<th>Have you ever produced any OER/OCW materials yourself?</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>16</td>
<td>33%</td>
</tr>
<tr>
<td>No</td>
<td>19</td>
<td>40%</td>
</tr>
<tr>
<td>No answer</td>
<td>13</td>
<td>27%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>48</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
Such materials would include lecture presentation slides, lecture notes or tutorials. Respondents claim to have licensed most of the resources using Creative Commons licenses. Some of the respondents also commented on the benefits of increased exposure or visibility through the production of OER or OCW materials. When asked about the reasons for creating OER or OCW, about the type of materials created, license terms applied and how they would describe the experiences of creating OER or OCW respondents commented:

“After my paper explaining my innovative teaching was rejected by a journal I chose to publish it as an OER. It is on UCT OpenContent website. I used CC BY-NC-SA. I was thrilled with this option. I’ve enjoyed watching the clicks grow, having the opportunity to take control of my contribution and so able to update the material, using it as an example to promote OER. I am busy working on my next resource.”

“I use, and therefore I share. I created slides and used Creative Commons Licensing. It was great!”

“In my research by publishing journal articles. Posting my lecture slides and videos using creative commons license.”

“OER materials were mostly in the form of video, audio and images. The licensing was Creative Commons. It felt liberating as I was able to contribute without all the usual bureaucratic processes we have to go through.”

The fact that only 30% of respondents using OER or OCW in teaching claim to have also produced or claim to have contributed to the production of OER or OCW is disappointing, and yet also encouraging. These findings suggest that a substantial number of OER or OCW users also contribute to their creation. Results from similar surveys appear to confirm these findings. While academics generally seem to recognize the value of OER or OCW, fewer engage in their production, with even fewer willing to share produced OER. Some of the frequently stated concerns in this regard are related to concerns over quality, attribution, lack of control over reuse or modification patterns, lack of incentives/reward mechanisms for producing OER and more (Yuen & Wong, 2013). Furthermore, a study conducted by Yawan & Ying revealed that institutional authorities ranked ownership and possible legal barriers together with concerns over impact on institutional reputation, through concerns over quality, amongst the most significant barriers to producing OER (2013, pp. 21–39).

**Identified challenges to using or producing OER & OCW**

A number of challenges were identified through this case study that have implications for using or producing OER & OCW. These could be categorized as:

- Lack of knowledge related to regimes governing ownership and use, reuse and modification of OER & OCW
- Lack of awareness about policies/regulations that govern ownership and use of course materials created by faculty
- Institutional support & infrastructural challenges
- Lack of knowledge about the existence of OER or OCW and ability to find appropriate or quality OER & OCW

**Licensing issues**

The findings revealed that only slightly more than half (52%) of all the respondents (users of OER & OCW) are aware of license terms that govern ownership and use, reuse or modification of OER & OCW (Table 7) and have correctly identified a range of CC licenses to this effect. Furthermore, only 31% of respondents are aware of policies and regulations that govern ownership and use of course materials created by faculty (Table 8).
In the context of producers of OER or OCW, the majority of respondents (75%) are aware of license terms governing the ownership, use, and modification of OER (Table 9).

However, only half of the producers of OER or OCW are aware of institutional policies that govern ownership and use of materials created by faculty (Table 10).

In the context of users of OER & OCW, lack of knowledge related to license terms that govern their ownership and use, reuse or modification might lead to their incorrect use (such as failure to attribute the original source, or performing modifications of existing OER or OCW where the license terms applied prohibit their adaptation). In the context of producers of OER or OCW, lack of knowledge about copyright might lead to incorrect choice of licenses, or to not assigning an open license.

Table 7: Awareness of license terms that govern ownership and use, reuse, or modification of OER

<table>
<thead>
<tr>
<th>Awareness of license terms that govern ownership and use, reuse or modification of OER</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>25</td>
<td>52%</td>
</tr>
<tr>
<td>No</td>
<td>10</td>
<td>21%</td>
</tr>
<tr>
<td>No answer</td>
<td>13</td>
<td>27%</td>
</tr>
<tr>
<td>Total</td>
<td>48</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 8: Awareness of policies and regulation governing ownership and use of course materials created by faculty

<table>
<thead>
<tr>
<th>Awareness of policies and regulation governing ownership and use of course materials created by faculty</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>15</td>
<td>31%</td>
</tr>
<tr>
<td>No</td>
<td>12</td>
<td>25%</td>
</tr>
<tr>
<td>Don't know</td>
<td>10</td>
<td>21%</td>
</tr>
<tr>
<td>No answer</td>
<td>11</td>
<td>23%</td>
</tr>
<tr>
<td>Total</td>
<td>48</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 9: Awareness of license terms that govern ownership and use, reuse or modification of OER amongst producers of OER

<table>
<thead>
<tr>
<th>Produced OER</th>
<th>Awareness of license terms that govern ownership and use, reuse or modification of OER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>YES</td>
</tr>
<tr>
<td>YES</td>
<td>12 (25%)</td>
</tr>
<tr>
<td>NO</td>
<td>10 (21%)</td>
</tr>
<tr>
<td>No answer</td>
<td>3 (6%)</td>
</tr>
<tr>
<td>Total</td>
<td>25 (52%)</td>
</tr>
</tbody>
</table>
at all (in which case the default “all rights reserved” copyright applies). This is demonstrated through comments received from respondents who produce OER or OCW:

“I created Lecture slides/notes. I used no license. It has proven to be very useful.”

“I created OER (visual and audio) to improve retention. License: Copyright. It improved attention and interest.”

Furthermore, in the context of producers of OER, lack of knowledge about existing institutional policies that govern ownership and use of course materials created by faculty members might lead to conflict between faculty and their institution when, for example, faculty want to release teaching materials as OER or OCW under open licenses, but institutional policy dictates that copyright is held by the university.

The results above appear to resonate with findings by Yawan & Ying, where 53.8 % of producers of OER in their survey did not deal with copyright issues, and with 66.2% not having used any licenses to express the rights that others have to use resources that they have produced (2013, pp. 21–39). While there might be sufficient general knowledge about copyright legislation and Creative Commons licenses, the findings indicate that in-depth knowledge of existing copyright legislation and regimes governing use, reuse or modification or production of OER & OCW is insufficient. This has been identified as one of the principal barriers to using or producing OER by faculty or by institutional authorities (Yawan & Ying, 2013; Daryono & Belawati, 2013; Yuen & Wong, 2013).

### Institutional & infrastructural challenges and finding appropriate OER & OCW

Institutional challenges, such as existing intellectual property policies, internet speed or usage rules, lack of support, incentives or reward mechanisms, finding appropriate OER or OCW and lack of awareness about their existence have been identified as additional challenges related to using or producing OER or OCW.

When asked about these challenges, respondents commented:

“Lack of institutional support.”

“Some students in neighboring countries battle to download such material.”

“My university blocks many sites, amongst them YouTube, not only for students, but also for staff. Furthermore, whilst we have many computer labs and computers many of these are not open to the Internet, as access to the Internet is thus not as easy as it should be for students.”

---

**Table 10: Awareness of policies and regulations that govern ownership and use of course materials created by you and other faculty amongst producers of OER**

<table>
<thead>
<tr>
<th>Produced OER</th>
<th>Awareness of policies and regulations that govern ownership and use of course materials created by you and other faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>YES</td>
</tr>
<tr>
<td>YES</td>
<td>8 (17%)</td>
</tr>
<tr>
<td>NO</td>
<td>5 (10%)</td>
</tr>
<tr>
<td>No answer</td>
<td>2 (4%)</td>
</tr>
<tr>
<td>Total</td>
<td>15 (31%)</td>
</tr>
</tbody>
</table>
“Time is the biggest challenge. Sometimes I cannot find what I’m looking for. Frequently, it is because I have not used the correct search. If we had a hub for OER in our Faculty we could draw on the expertise of others who are more familiar and experts in finding materials.”

“I would like to have more time to explore OER so that I can use it effectively in class. I sometimes have problems with the internet connection being down or too slow.”

“Mindset of some in the institutions about OERs.”

“Some lecture slides and videos make reference to international terms, which are not used locally.”

“Sometimes difficult to upload and download big files due to bandwidth problems.”

“It is a wonderful pathway towards better education for all. However, many teachers and people in powerful positions such as those with vested interests in traditional publishing are creating barriers to further its use.”

“More awareness of its existence to lecturers at Universities.”

“Materials should be reviewed/moderated by another colleague whose details (experience in the field, qualifications, etc) should appear on the materials—this should become the norm, so that confidence in the correctness of the materials can be enhanced.”

“Institutionally, I think many universities in SA are way behind in enabling the use of OER/OCW by staff and students for teaching and learning. For one, open access to all Internet sites in all labs at my university would be a great start.”

“The institution holds copyright on all the materials produced as part of my work, so it is not clear if I can make it freely available without consulting the IP office.”

The findings have not provided answers as to why certain institutions apply strict Internet usage rules, for example by blocking certain Internet sites. However, it could be argued that many HEIs in South Africa, in particular resource-poor universities in rural areas, exercise strict controls over internet usage, to a large extent, due to the fact that access to reliable, sufficient, and high speed internet is restricted due to infrastructural challenges or relatively high cost of bandwidth.

The respondents have also identified user ability to find relevant and quality OER or OCW amongst challenges inhibiting the use and/or production of OER or OCW. The survey has not probed respondents on their practices related to finding appropriate and relevant OER or OCW. However, findings from recent surveys reveal that lack of awareness related to finding relevant and quality OER or OCW act as one of the main deterrents to using OER or OCW in teaching (Kim, 2013) and appear to suggest that generic searches (such as google or yahoo) are used more frequently than specialized OER repositories which could be linked to lack of knowledge about specialized OER & OCW repositories (Harishankar et al., 2013).

Finally, the findings revealed that lack of institutional support such as existing IP policies related to specifications or lack of clarity as to who owns copyright on teaching resources and lack of support, reward or incentive mechanisms inhibit the use or production of OER & OCW amongst academics further. These findings are consistent with results from other surveys (Abeywardena et al., 2013; Kim, 2013; Yamada, 2013; Daryono & Belawati, 2013; Yuen & Wong, 2013; Yawan & Ying, 2013).

Summary of the main findings and recommendations

The findings from this case study have provided important insights into the current uses, and motivations for using and producing OER or OCW among academics in SA public HEIs. Participants in the case study have been using a variety of OER & OCW in teaching, with images and video lectures identified as the most useful OER in a classroom setting. Making OER & OCW available
as additional resources to students, using such materials to improve their knowledge in the field, including OER & OCW in their teaching materials or course syllabus and using such materials to help develop or revise curriculum for their departments or schools were among the most frequently stated reasons for using OER & OCW. Further elaborations by respondents in this regard revealed that OER & OCW are particularly useful in a context where there is a scarcity of content in certain subject areas, or in their efforts to encourage a more learner-centered approach by helping students develop skills needed in order to evaluate appropriateness of online content. Making classes more interesting and engaging for students, using class time to emphasize class discussions, improving and incorporating new concepts into teaching materials, and streamlining course preparation were identified as the main benefits of using OER & OCW in teaching. In addition to using OER & OCW in teaching, a number of respondents have also produced or contributed to the production of OER or OCW, such as lecture notes or presentation slides, and have identified the resulting increased exposure or visibility as one of the main benefits related to them producing OER or OCW.

The benefits of using OER & OCW in teaching identified through this case study resonate with reported benefits from other studies (Yuen & Wong, 2013; Daryono & Belawati, 2013). The findings revealed that the use of OER & OCW in teaching can have significant positive impact on quality of teaching and learning or quality of teaching and learning materials; all of which, in turn, benefit the students. Furthermore, the findings revealed that many users of OER & OCW, in turn, also contribute to their production. Findings from the OER Health initiative indicate that collaborative production of OER resources has numerous benefits. It leads to the production and sharing of contextually relevant and up to date knowledge; which, in turn, has benefits for all stakeholders involved, including academics, students and higher education institutions (Ngugi & Butcher, 2011). Such findings clearly demonstrate that use, production and sharing of OER or OCW should be encouraged and actively supported by higher education institutions.

**Recommendation 1: Emphasize the value of using and producing OER & OCW**

In order to encourage institutions to provide support for practices such as use or production of OER & OCW, it can be argued that their use and production is a cost-effective mechanism to revise existing curriculum, and to create teaching resources. It can be argued that it is an extension of higher education offerings in their attempts to provide relevant, quality and up to date educational resources. It can be argued as a potential launch initiative into new collaborative partnerships, as opposed to considering such practices new initiatives, requiring additional resources that are detached from the core activities of higher education institutions.

In the context of this study, further research with students would provide valuable and important insights as to how they perceive the value and benefits of engaging with OER or OCW in their classes. Furthermore, additional research is needed in order to understand how academics practically incorporate or adapt OER & OCW into their teaching resources, examining how they address copyright and investigating what challenges they encounter in this regard. Such information would help to design appropriate and relevant support interventions for such practices.

A number of challenges that have implications for using or for producing OER & OCW have been identified through this case study. These are related to lack of in-depth knowledge about existing copyright legislation, regimes governing ownership of materials created by faculty or open content licensing framework governing use, modification and creation of OER & OCW. Further inhibiting factors in this regard are related to lack of institutional support such as existing IP policies or lack of support mechanisms and incentives. Infrastructural challenges, lack of awareness about their existence and ability to find quality and relevant OER & OCW have been identified as factors further inhibiting their use. These findings, in general, confirm results obtained through similar surveys.
Infrastructural challenges, with some universities imposing strict Internet usage rules by blocking certain sites, have been identified by some respondents as inhibiting factors to using OER & OCW in teaching. However, it can be assumed that some of the infrastructural challenges will be mitigated in the near future which could lead to universities relaxing their internet usage rules. For example, in 2010, the Ministry of Higher Education and Training allocated 28 millions to help partially fund development of Internet access networks for rural campuses (Department of Higher Education and Training, 2010). Furthermore, with the installation of new undersea cables this will not only increase access to high-speed, reliable Internet infrastructure but will also contribute to a gradual decrease in bandwidth prices (Gedye, 2012).

The lack of awareness related to finding quality and relevant OER or OCW appears to point, in general, to lack of knowledge about the existence of general as well as specialized, subject or discipline specific, OER & OCW repositories.

**Recommendation 2: Address challenges associated with finding appropriate and evaluating the quality of OER & OCW**

In addition to highlighting benefits of engaging in the use and production of OER & OCW, there is a need for targeted outreach and awareness-raising about OER & OCW, including how to locate and use appropriate OER or OCW through existing OER & OCW repositories.

More research is also needed to understand which factors academics take into account when evaluating quality and appropriateness of existing OER & OCW for their teaching practice or teaching resources. This would be particularly useful in order to develop vetting mechanisms or indicators that could be used by academics to rank/rate existing OER and OCW for quality.

Furthermore, lack of in-depth knowledge related to existing copyright legislation, regimes governing ownership of materials created by faculty or regimes governing use, creation or modification of OER & OCW is a serious inhibiting factor and requires prompt intervention not only because it can discourage use and production of OER & OCW by academics but also, as demonstrated through other studies, can discourage universities to provide adequate support for such practices.

**Recommendation 3: Address copyright-related challenges**

Intervention aimed at faculty members clarifying matters related to the ownership and use of materials created by faculty at universities.

Training for faculty and administrators on copyright and open licensing to permit them to better understand how to use, modify or create OER & OCW and the implication thereof. Further awareness raising interventions are needed to help faculty and administrators locate appropriate support mechanisms in this regard. For example, a number of institutions and organizations have created useful training materials on copyright –related matters that are available openly and freely on the Internet. OER Foundation organizes free and open “Open Content Licensing Course for Educators” twice a year. OER Africa provides ongoing guidance related to licensing issues. Creative Commons (CC) has a large worldwide network of CC affiliates in numerous countries (including South Africa) who can be approached for questions or guidance related to copyright. The School of Open launched during the global 2013 Open Education Week, also offers a range of courses related to copyright.

Finally, lack of institutional support, such as existing IP policies or lack of support or reward mechanisms has been identified as one of the most significant barriers to using or producing
OER & OCW. Successful use or production of OER is dependent upon its integration into university processes through policies (Ngugi & Butcher 2011; Dhanarajan & Abeywardena, 2013) and through creation of related support or reward mechanisms.

The question related to institutional support interrogates why universities should support practices such as using OER & OCW in teaching, or producing and sharing teaching resources as OER or OCW? An important argument is that the use or production of OER & OCW contributes to improvements in the quality of teaching and learning and teaching resources. It can lead to new international collaborations, which has numerous benefits for students, academics as well as institutions. There is also the argument of knowledge as public good, meaning that research outputs and teaching resources developed through public funds (taxpayers money) should be made publicly (openly) available. However, these arguments alone might not be sufficient to get institutions “on board.”

The reality is that providing institutional support for such practices would require adoption of broader open content policies (in order to address copyright issues, for example), and also require the creation of related support structures and reward mechanisms. This would require allocation of additional resources (staff and financial). Often, many institutions do not have these resources. In this context, there is a need for a better understanding as to how HEIs are financed and incentivized, as well as how individual academics are incentivized.

There are significant financial subsidies for universities in South Africa for each academic article published by an academic in a recognized academic journal. For academics, publishing articles in academic journals is, in turn, tied to job roles and university promotion mechanisms. What this indicates is that publishing of research outputs in academic journals is required, valued and rewarded. Publishing of teaching resources as OER or OCW, at the moment, is not. This would also explain why there appears to be only one institution of higher learning in South Africa with an approved open content policy while there are numerous universities supporting open access practices, such as depositing copies of research outputs in university’s repositories.

Governmental policies can play a significant role in encouraging or discouraging the use of OER or production of teaching resources as OER (Dhanarajan & Abeywardena, 2013; Bossu, Bull & Brown, 2012). At the Global level, UNESCO hosted a global OER congress in June 2012, during which the Paris Declaration on OER was approved with the support of government representatives from around the world. In South Africa, the move towards opening up of education has been recorded in the new proposed HE policy. This aims to expand access to education through increasing distance teaching offerings and the production of OER. These developments indicate steps in the right direction; however, it remains to be seen how such initiatives translate into practice.

**Recommendation 4: Address institutional challenges**

Further research is needed with university authorities in South Africa to understand how they perceive the value of using OER or producing teaching resources as OER or OCW, what their concerns are in this regard and what kind of support they would need in order to support such practices at higher education institutions.

Provide support for university authorities to help them adopt broader open content policies, clarify any concerns that they might have in this regard or point them to relevant resources for assistance. For example, the recently launched “Open Policy Network” aims to provide support to governments or institutions in developing and adopting open content policies.

Engagement is also needed with government representatives to help them realize the value of OER and OCW and to identify how they could support higher education institutions in this regard through policies and incentives.

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Finally, a special thank you also goes to Mary Lou Forward (OCW Consortium) and Gino Fransman (University of South Africa) for proofreading the various drafts of this paper and for their valuable input.

Notes

1 The original press release (April 2011) announcing MIT’s decision to make nearly all of its courses freely available on the internet can be access here: Retrieved from http://web.mit.edu/newsoffice/2001/ocw.html
2 More information about Creative Commons licensing framework is available here: Retrieved from http://creativecommons.org/
3 For a good overview of OER initiatives, please visit: Retrieved from http://en.wikipedia.org/wiki/Open_educational_resources
4 OER Commons is a search engine for OER: Retrieved from http://www.oercommons.org/. Furthermore, the OER InfoKit provides a useful list with search engines that can be used to locate OER: Retrieved from https://openeducationalresources.pbworks.com/w/page/27045418/Finding%20OERs
It is also possible to search for Creative Commons (CC) licensed resources via CC Search: Retrieved from http://search.creativecommons.org/
6 You can learn about members of the OCW Consortium here: Retrieved from http://www.ocwconsortium.org/en/members/members
8 More information about OER Africa and various OER Africa partnerships is available here: Retrieved from http://www.oerafrica.org/
9 OER Health resources developed through this partnership can be found here: Retrieved from http://www.oerafrica.org/healthoer/Home/tabid/1858/Default.aspx
10 AVU’s open courses are available here: Retrieved from http://oer.avu.org/about
11 The portal with free and open courses is available here: Retrieved from http://free.uwc.ac.za/
12 The portal with OER is available here: Retrieved from http://openuct.uct.ac.za/
14 More information about OER University can be obtained here: Retrieved from http://wikieducator.org/OER_university/Home
15 The project is the first of its kind in South Africa and designed to find out about the use of emerging Information and Communication Technologies (ICTs) in teaching and learning across Higher Education Institutions. It is funded by the National Research Foundation. More information about the project is available here: Retrieved from http://www.emergingictsb.blogspot.com/
16 Lime survey, a free open source survey application, was used to develop the survey instrument: Retrieved from http://www.limesurvey.org/
17 There are 23 public higher education institutions in South Africa: Retrieved from http://www.che.ac.za/heinsa/
18 More information about the courses is available here: Retrieved from http://wikieducator.org/Open_content_licensing_for_educators/Home
More information about CC Affiliates and the type of work they do is available here: Retrieved from http://wiki.creativecommons.org/CC_Affiliate_Network

More information about the School of Open and the courses is available here: Retrieved from https://p2pu.org/en/schools/school-of-open/

The Open Education Week is a global event organized by the OCW Consortium. More information is available here: Retrieved from http://www.openeducationweek.org/

The Declaration is available here: Retrieved from http://oercouncil.org/index.html


References


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Pedagogical quality enrichment in OER-based courseware: Guiding principles

Pradeep Kumar Misra
Faculty of Education & Allied Sciences, M.J.P. Rohilkhand University (India)

Abstract
This is a critical phase for Open Educational Resources (OER) movement: on one side the number of OER is increasing rapidly, and on other side debates about quality of OER-based courseware are heating up. These debates emanate from the fact that OER-based courseware are supposed to help users to follow a logical learning path and get an engaging, interactive, and enjoyable learning experience. There are two aspects of quality assurance in OER-based courseware: content and pedagogy. The content aspect primarily rests with subject experts, and pedagogical quality of courseware mainly lies in the hands of developers. Present trends reveal that mainly enthusiasts, working with some support from the institution management are designing and developing OER-based courseware. There seems a possibility that these enthusiasts are developing courseware without undergoing any specific courseware development training, and in the absence of proper knowledge and training about pedagogy, one can not be sure that the produced courseware will be of superior quality. In this backdrop, present paper discusses and details about a number of guiding principles for enrichment of pedagogical quality in OER-based courseware.

Keywords: Open Educational Resources; OER-based courseware; Pedagogical quality enrichment; Principles for OER development; Quality assurance

Introduction
Now-a-days organizations (UNESCO, OECD, European Union, COL, etc.), institutions (Universities, Colleges, etc.), and individuals are engaged in promotion, dissemination, and use of Open Educational Resources (OER). The term OER was officially introduced first time in 2002 at a forum on the impact of open courseware for higher education in developing countries (UNESCO, 2002). Since then, OER have been recognized as educational materials and resources that are shared openly and freely for all to use. OER was perceived as a means of sharing unique and interesting resources potentially of value to others who would not otherwise have access to them (Johnstone, 2005). OER apply the principles of openness-particularly the freedoms of use, modification and redistribution of digital materials for teaching, learning, and research. Generally, OER refers to accumulated digital assets that can be adjusted and provide benefits without restricting the possibilities for others to enjoy them (OECD, 2007). Examples of OER include: full courses, course modules, syllabi, lectures, homework assignments, quizzes, lab and classroom activities, pedagogical materials, games, simulations, and many more resources contained in digital media collections from around the world.

The OER movement is based on the philosophy that creation of content must be primarily aimed for welfare and use of people without any commercial restrictions. Clarifying about the intention of OER movement, OECD (2007, p. 4) points out, “Until recently, much of the learning materials were locked up behind passwords within proprietary systems, unreachable for outsiders. The open educational resource (OER) movement aims to break down such barriers and to encourage and enable freely sharing content.” Regarding OER movement, a report of William and Flora Hewlett Foundation underlines,
At the heart of the movement toward Open Educational Resources is the simple and powerful idea that the world’s knowledge is a public good and that technology in general and the Worldwide Web in particular provide an extraordinary opportunity for everyone to share, use, and re-use knowledge. OER are the parts of that knowledge that comprise the fundamental components of education—content and tools for teaching, learning and research (Atkins, Seely and Hammond, 2007, p. 5).

On other side, debates about definition, range and diversity of the OER are still going on in different parts of the world and at different forums. For example, in an internet discussion forum about Open Educational Resources, it was observed that resources are not limited to content but comprise, “Three major areas of activity: the creation of open source software and development tools, the creation and provision of open course content, and the development of standards and licensing tools” (UNESCO, IIEP and Albright, 2005, p. 1). Elaborating further, Atkins, Seely and Hammond (2007, p. 4) suggest,

OER are 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 re-purposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge.

According to Geser (2012, p. 12), “OER are understood to comprise content for teaching and learning, software-based tools and services, and licenses that allow for open development and re-use of content, tools and services.” Whereas, 2012 Paris OER declaration defines OER as, “Teaching, learning and research materials in any medium, digital or otherwise, that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions” (UNESCO, 2012, p.1). While, Clements and Pawlowski (2012) see OER as resources for the purpose of learning, education, and training that are freely accessible. This includes literature and scientific resources (open access for education), technologies, and systems (open source for education), and open content (actual learning materials/contents) as well as related artefacts (such as didactical materials or lesson plans). In backdrop of these observations and discussions, one can say that OER are materials used to support education that may be freely accessed, reused, modified and shared by users.

**OER-based courseware: Quality issues**

A course is defined as a package of educational materials starting at a particular point in the knowledge spectrum, designed to lead to a greater understanding of the issue or topic (Valkenburg, 2011). Whereas, courseware is intended as kits for teachers or trainers or as tutorials for students and mainly include: material for instructor-led classes, material for self-directed learning/training, web sites that offer interactive tutorials, material that is coordinated with distance learning, such as live classes conducted over the Internet, and videos for use individually or as part of classes (Jing, 2005). Like any other courseware, OER-based courseware also includes different type of contents and activities as part of larger learning modules or complete courses, depending on different educational needs. The main difference between traditional courseware and OER-based courseware is that former uses licensed and copyrighted material while later uses different type of open digital publication of high quality educational materials. These materials are organized as courses, and often include course planning materials and evaluation tools as well as thematic content (Open Course Ware Consortium, 2012).

OER-based coursewares are slowly becoming an important part of academic world and there are many reasons behind it. White (2008, p. 7) clarifies,
The influence of the open source movement continues to make an impact on education because of the reduced costs of installation and maintenance of a compendium of office productivity applications and access to free content and services specifically dedicated to education.

OER initiatives, particularly those based in institutions, encourage transparency and can stimulate more quality control and competition to benefit individual learners as well as taxpayers generally. Furthermore, the movement seems to grow both top-down and bottom-up; new projects are started at institutional level and individual teachers and researchers use and produce OER on their own initiative (OECD, 2007, p. 118). The importance of OER stems from the fact that these resources are seen as fundamental to the knowledge society and economy. Therefore it is essential that teachers and students become proficient with digital tools and services and make them aware about various content licenses (Geser, 2012).

OER projects can expand access to learning for everyone, but most of all for non-traditional groups of students, and thus widen participation in higher education. They can be an efficient way of promoting lifelong learning, both for individuals and for government, and can bridge the gap between non-formal, informal and formal learning (OECD, 2007, pp. 9–10). Without the constraints of time or geography, education has the potential to combat economic, social and cultural obstacles. Through independent, self-determined learning and open academic content, the individual is able to grow intellectually beyond previous personal, institutional or local boundaries. Other benefits range from developing valuable work skills to engaging in life-enriching, lifelong learning (D’Antoni & Savage, 2009, p. 61). In other side, some experts have concerns about the applicability of OER, as suggested by Hudson and Moyle (2004) that although open source software, services and content have matured there remains unfounded uncertainty about the robustness and reliability of these applications in education as a viable option.

Instead of these apprehensions, the number of OER-based courseware is increasing rapidly as noted by OECD (2007, p. 12), “With thousands of (open courseware) courses from internationally reputed higher education institutions available for free, teachers will need to consider that students compare their curriculum with others.” In the last 10 years, the number of OER-based courseware, as well as their availability and distribution via learning object repositories (LORs), has rapidly increased. There has been a general awakening in the e-learning community regarding OER (Downes, 2007). Tzikopoulos, Manouselis and Vuorikari (2007) point out that more OER repositories are built, and metadata of existing repositories are harvested by federated repositories to improve access to high numbers of OER. There are literally millions of open education resources currently available on the Internet. But what differentiates them from one another? How can educators determine whether the resources are high quality? As educators look for ways to help students learn and improve achievement, they need to know which tools may fit their specific needs (Achieve, 2012). These questions more or less raise an increasing need for quality assurance in OER-based courseware.

Question of quality is more or less associated with developers of OER-based courseware. The irony is that much is not known about who is actually producing and developing OER, as observed by Hylén (2009, p. 131),

Of course, institution-based initiatives, like the OCW programmes at different universities, use their own staff to produce their material; and some of them, such as MIT, try to continuously evaluate who their users are. But, as a whole, very little is known about the users and producers.

Currently, the majority of OER development is undertaken on a project basis, and often with donor support (D’Antoni and Savage, 2009). Present trends reveal that mainly enthusiasts, working with some support from the institution management are designing and developing OER-based courseware (Hylén, 2009). There seems a possibility that these enthusiasts are developing courseware
without undergoing any specific courseware development training, and in the absence of proper knowledge and training about pedagogy, one cannot be sure that the produced courseware will be of superior quality. In other words, one of the most important concerns for OER-based courseware is their quality.

Before delving further on this issue, it will be beneficial to understand the meaning of quality in context of OER-based courseware. Quality can be defined as “[. . .] appropriately meeting the stakeholders’ objectives and needs which is the result of a transparent, participatory negotiation process within an organization” (Pawlowski, 2007). Quality is not an objective measure but in particular a perceived value for stakeholders and their context. It is difficult to specify precisely what “quality” means in the context of OER, where accessibility and availability are at least as important as the production values they embody. Quality can be applied in both a technical and pedagogical sense—and both are relevant. However, the issue remains that the quality of learning resources is usually determined by using the lenses of: accuracy, reputation of author/institution, standard of technical production, accessibility, and fitness for purpose (McGill, 2011). The issue of quality in OER-based courseware development process relates to two aspects-content and pedagogy. The content aspect primarily rests with subject experts, and pedagogical quality of OER-based courseware mainly lies in the hands of developers.

**Pedagogical quality enrichment in OER-based courseware: Guiding principles**

OER-based courseware usually employ a range of media like words, pictures, audio, video, graphics, animation, etc. and need to be very carefully structured so that the users can follow a logical learning path and get an engaging, interactive, and enjoyable learning experience. In fact meaningful learning requires that the learner engage in substantial cognitive processing during learning, and considering this the central challenge before designers is to minimize the cognitive overload of learners (Mayer & Moreno, 2003). Therefore, it is obvious that beside technical expertise, developers must have sufficient knowledge about useful pedagogic principles. Pedagogic principles talk about those actions which shape the learning experiences ranging from technical infrastructure to course design to teaching (Anderson & McCormick, 2005). There are number of principles that can be employed by developers to enrich pedagogical quality in OER-based courseware. These principles can be of immense help to developers for designing and developing highly interactive, engaging, and effective courseware. Keeping this in view, need of the hour is that principles for pedagogical quality enrichment in OER-based courseware should be identified and made public. There are five stages of development of OER-based courseware: planning, preparation, design, development, and presentation. The guiding principles that are helpful in all these stages are discussed one by one.

**Principles for planning stage**

Planning is one of the most important stages of development of OER-based courseware. Planning helps developers to visualize that what kind of resources they would like to produce and for what purpose and effect. The developers are required to plan well and in advance to develop effective and useful OER-based courseware that accommodates human learning processes regardless of the media involved (Clark, 2002). Developers must keep in mind that proper planning is essential to carryout courseware development task effectively and efficiently. The following principles can be of great help for developers in this regard:
(i) Visualize and specify the target users

Before developing the OER-based courseware, developers must visualize the potential users in their mind. They must keep in mind that whatever the scenario, it is the learner, who is at the center of the learning experience (Boettcher, 2007). Therefore, it will be beneficial to think about the potential learners, their profile and intention to use the resource. The developers must understand that visualizing about learners is instrumental to see the issues from the user’s point of view and to put appropriate questions and interactions in the courseware. This awareness will help the developers to keep the content relevant to the needs of learners and to build appropriate resource (Brandon, 2005). Most importantly, visualization about learners will be helpful to overcome abstraction as OER-based courseware has limited scope for face to face contact and constructive feedback. The art of pedagogy demands that developers must clearly and specifically declare that their courseware is targeted to which type of learners. This declaration will help the learners to identify and access the required courseware in easiest possible way.

(ii) Customize the learning needs of targeted users

The ability of the developers to customize learner needs is very important for developing useful OER-based courseware. Keeping this in view, developers are required to assume about learners previous knowledge, understanding about topic, and their learning needs. According to Phillips, Ahmed and Kaur (2005), it will be beneficial for developers to stipulate what changes students taking the course will experience, inform students what is expected of them as well as indicate what will be important in assessing the course. The useful practice for developers in this regard will be to get some experience as a user before producing OER-based courseware. Past experiences of undergoing e-courses, e-sessions and e-instruction will be handy for developers to develop courseware from a learner’s perspective. This practice will further help developers to know about learners’ likings and disliking. The simple principle in this context will be that while developing OER-based courseware, developer must think that he/she is a learner and this package is mainly designed to satisfy his/her individual learning needs. This customization of learning needs will help the developers to ensure the pedagogical quality of courseware.

(iii) Assimilate instructional challenges

It is very important for developers to understand the challenges of OER-based courseware instructional model. These challenges can be in terms of technology, diverse audience profile (experience and motivation levels), cultural diversity, learning complexity, and so on (Brandon, 2005). They must realize that it is not the medium that causes learning; rather it is the design of the lesson itself and the best use of instructional methods that make the difference (Clark, 2002). To overcome these challenges, developers can relate the courseware with a classroom situation, and think about best possible way to meet the learners’ needs. Developers must also remember that OER-based courseware are learner centered in nature and normally works on the principle of direct interaction between users and courseware. The greater challenge before developers in this context is to hook the learner, sustain the learner, and satisfy the learner. Developers can overcome these types of instructional challenges by understanding the science of instruction. They are advised to have a thorough understanding about how instruction takes place, how it is encoded and consequently decoded by the learner. This understanding will certainly help them to enhance the pedagogical quality of OER-based courseware.
(B) Principles for preparation stage

After planning, the next important stage for development of OER-based courseware is preparation. During this stage, the developers are expected to prepare them to undertake the task of development. The stage of preparation mainly encompasses—presentation of contents, understanding the expectations of learners, and methodology of instruction. Learners have a wide variety of learning styles and needs. Language, experience, interests and ability all determine the ability and approach to learning (Anderson & McCormick, 2005). The developers are expected to specifically prepare about these issues to develop pedagogically sound courseware. The following principles can be of great help for developers during preparation stage:

(i) Learn about the learning states

People learn in different ways. Developers can not exactly predict that how the users are going to learn but they can consider about the learning states of potential users. The learning state or condition of an individual makes it possible for him or her to engage profitably in a given learning activity. The learning readiness of individual depends on many factors such as -past experiences, cognitive development, affective state, and motivation. It will be beneficial for developers to have knowledge and understanding about these characteristics or circumstances before proceeding on a given course of action. To keep pace with the changing expectations of learners, it will be useful for courseware developers to understand the psychology of learning and update them about evolving researches on human learning and learning states. This understanding will help them in number of ways, as suggested by Mayer and Moreno (2002, p. 117), “The relation between psychology and education is a two-way street in which psychological theories can lead to improvements in educational practice and the challenges of realistic learning environments can help cognitive psychology build better theories.”

(ii) Emulate technology of instruction

Technology of instruction plays a pivotal role for designing of OER-based courseware. OER-based courseware needs to be designed for diverse groups of learners and their learning needs. The instructional aspects decide that how learners will perceive the OER-based courseware. In fact, appropriate instructional techniques help developers to engage and entertain learners with courseware. The designers are expected to make distinctions between cognitive and emotional interest of learners. Cognitive interest stems from materials that promote understanding of the content presented and emotional interest comes from the addition of extraneous materials. The goal should be to promote cognitive interest and avoid emotional interest in situations that require cognitive learning processes (Clark & Mayer, 2003). There are many instructional techniques to promote cognitive interests of learners, like using interesting contexts, novel situations, real-world or authentic environments, problem-solving scenarios, simulations, engaging themes, engaging media, drill and practice and interface elements. The developers must use these and other appropriate instructional technologies with reference to what is to be conveyed and how to provide meaningful experiences and knowledge to the learners.

(iii) Choose appropriate media

Often developers feel that adding a number of media like words, pictures, audio, video, graphics, animation, etc to the courseware would make an interesting instructional design. While a graphic-intensive instructional design might appeal to the novice learners, but for the serious and focused one, this will not work. It is true that these elements make the courseware glamorous but on the
contrary they also erode the sheen out of the learning activity (Brandon, 2005). Clark (2002) suggests that visuals or text that is not essential to the instructional explanation be avoided and advocates that we need to make a distinction between entertainment and learning. Considering this, developers must understand that excessive use of media elements serve as distracters in the learning process. They must also keep in mind that real essence lies in a balanced use of media elements to enhance learning. The underlying principle is that developers of OER-based courseware must use a design that avoids unnecessary graphic and media elements.

(C) Principles for instructional design stage

The instructional design is another crucial aspect for development of OER-based courseware. Appropriate and need based instructional design is a type of barometer for checking the pedagogical quality of OER-based courseware. The purpose of this phase is to generate the lesson plans and lesson materials. During this phase one develops the instruction, all media that will be used in the instruction, and any supporting documentation. This may also include hardware and software (Middle East Technical University, 2013). Considering this, the developers are expected to take extra care and precaution while choosing the instructional design of OER-based courseware. In this context, developers can take benefit of following principles:

(i) Follow layman approach of instruction

The beauty of any instructional package lies in its ability to help learners to grasp the content in easiest possible way. For this purpose, the developers can go for “layman approach” of instruction. Layman approach works on the principle that one is able to teach a person that does not know anything about the presented topic. Following this approach, developers can try to provide more than one way of learning the content for learners. Further, developers must also understand that line after line of text makes learners grow bored and the instructional message gets lost. Therefore, use of graphics, non-offensive humor, and interaction (questions, drag-and-drop) will help the developers to keep developed courseware interesting even for those learners who are not familiar with the content (Brandon, 2005). The developers must also keep in mind that significant learning is acquired through doing. The best instructional material allows the learner to participate in the learning process and learning is best acquired by doing and practicing the desired task (Middle East Technical University, 2013).

(ii) Include interesting exercises

The foremost challenge before developers is to make courseware easy to use, engaging and interactive. One interesting way to make this is to have quizzes and surveys in the courseware. Utilizing little games or activities that user can do will also make the resource more interesting. Developers must also understand that these exercises will bring meaningful experiences and knowledge in the resources. Developers must realize that learners learn more and retain their learning longer if they acquire it in an active rather than a passive manner. Learning activities help learners to monitor their own progress, check their understanding, develop specific skills, apply what they have learned to real-world situations and to reflect on what they have done (Melton, 2002). Employing an exercise or game that requires participants to send individual messages to one another triangulates the learning. Adding games and simulations to resources arouse interest in learners that is quite essential for effectiveness of OER-based courseware. Simulation will particularly help the learners to understand the practical aspects of content and practicing psychomotor skills. To materialize this
in reality, developers can put the web addresses of simulation/hands on exercises from other OER in the courseware.

(iii) Ensure instructional interactivity

Instructional interactivity is usually defined as interaction that actively stimulates the learner’s mind to do those things that improve ability and readiness to perform effectively. The purpose of instructional interactivity is to wrestle intellectual laziness; to reawaken interest in learning; to strengthen ability to learn; and to provide an optimal environment to understand the content (Allen, 2003). Therefore, it will be beneficial for developers to realize that good interactivity helps learners to think, synthesize new information, and integrate their knowledge. They must also remember that instructional interactivity also contributes to self-confidence and tests learner knowledge whenever they might like a progress check. According to Merrill (2002), the most effective learning activities are those that are problem-centered and involve the student in activation of prior experience, demonstration and application of concepts to real-world settings. Therefore, developers are supposed to produce such coursewares that have high level of instructional interactivity. The developers can easily improve the instructional interactivity of courseware by adding games, demonstrations, simulations, and mini quizzes.

(D) Principles for development stage

The development of OER-based courseware is the most crucial stage for developers. At this stage, the developers are expected to develop the OER-based courseware as per his/her planning and ideology. Development begins with specifying the learning activities that will best assist in the learning process. Although the instructional setting was chosen in the analysis phase, this should be rechecked now to ensure that learning objectives have been fully developed (Middle East Technical University, 2013). During development, developers have to consider a number of permutations and combinations for coming up with expected courseware. There are certain principles that can be of great help for them to develop pedagogically sound OER-based courseware. Some of these principles are discussed below:

(i) Ensure correct and effective delivery of content

The content and its delivery are crucial to assure the effectiveness of OER-based courseware. The reason is that learning is based on an engagement of the learner with the content of the instruction (Clark, 2002). Therefore, developers must have basic understanding about the content and ensure that content is accurate. Developers can simply do it by taking help of subject matter experts. They must also remember that knowing what they are going to tell, how they are going to tell it, and how much time it will take are fundamentals of effective content delivery. The other important aspect is how to present the content before the learners. Developers are also advised to think about learners’ need and accordingly apply the relationship between text, sound, motion and graphics. It will also be beneficial for developers to put brain storming questions or quizzes to break the monotony of content. During development phase, the other useful trick will be to continuously review the courseware to gain perspective and to check that resource is on the right path.

(ii) Create engaging learning environment

Creation of right environment is instrumental for success of any instructional activity. This is equally true for OER-based courseware. In case of OER-based courseware, developers must try to understand that learner interfaces should be meaningful for learners. In other words, the courseware must
help learners to learn without memorizing symbols, terminology and procedures (Allen, 2003). To make this happen, the developers must use the pedagogy that should engage and motivate learners (Anderson & McCormick, 2005). Developers must also understand that little anxiety and discomfort can actually be helpful for learning but they should come from the user’s desire to do their best and not from fear and frustration with the interface (Allen, 2003). Developers can fulfill this demand of learners by providing useful and thought provoking learning experiences. The developers must also remember that right amount of information, delivered in the right way, for the right reason, and aligned with the right deliverables produces good environment for learning from OER-based courseware.

(iii) Engage users to practice and learn new things

Assessing learners’ skills and tailoring the courseware to accommodate the broad range of skills is must to prepare an effective courseware. Developers must realize that designing of courseware from learners’ perspective will be quite useful to produce engaging and interesting courseware. Through there courseware, developers must try to create a connected, personalized learning environment that challenges students to practice problem-solving, to work together and to use creativity to construct, share, and present their ideas, thinking and learning (Anderson & McCormick, 2005). They must also keep in mind that instead of static tasks, it will be more beneficial and appropriate to put motion and action in the courseware. They must realize that inclusion of good practices and breaking the material into small learning modules will make the content easy to absorb. Developers must also understand that encouraging learners to find new sources of information is helpful to make them engaged. Mentioning useful resources that are relevant to the content will be another helpful measure to make courseware more useful and pedagogically sound.

(E) Principles for presentation stage

Presentation is last and final stage for development of OER-based courseware. The good presentation is vital for ensuring the instructional effectiveness as well acceptability and usability of courseware among users. Santally (2011) observes that very often students do not read about course details and expected outcomes thoroughly or they simply do not understand what the course is about. Developers need to take care of this aspect and must also keep in mind that there are already a number of OER about same topics and only those having distinct presentation style will flourish and survive. To make this happen, the developers can take help of following principles:

(i) Provide good learning experiences

The vital aspect of OER-based courseware is to provide good learning experiences for different set of learners. They must realize that thousands of students and their teachers will use them with virtually no training (Anderson & McCormick, 2005). Therefore, coursewares are required to be meaningful, memorable, and transparent in its ease of use. The simple rule in this regard is that if a user does not understand the content, then that user will not gain from the courseware. If users do not see the meaningful implications of learning prescribed tasks, then applicability of such tasks will be of little help to user experience (Allen, 2003). The developers must keep in mind that well designed courseware is expected to be meaningful for every learner. The developers must also try to make resources sensitive to learners demand and appropriate to their needs and levels of readiness. To make this happen, developers must concentrate to select appropriate activities and engage users in experiences that are likely to be meaningful.

(ii) **Design the courseware thoroughly**

The designing of the OER-based courseware is most crucial aspect. The developers must pay attention to the fact that OER-based courseware is not a re-format of traditional classroom delivery. The developers must recognize the differences and embrace them. Sketching a good design on paper before committing materials to the learning platform / virtual learning environment will be helpful practices in this regard (Brandon, 2005). The developers must realize that best design is that which allows learners to learn the content in easiest possible way. The developers are also advised to read course scripts to ensure that they sound conversational. Minimizing the amount of text on course pages and where possible, using graphics to summarize and emphasize key points will provide a good design. While developing the courseware, developers must ensure that it is synthesized into an integrated program. It should flow as naturally as possible, with each lesson block building the foundation for the next one (Middle East Technical University, 2013).

(iii) **Keep the courseware conversational and interesting**

Learning can be enjoyable by keeping it simple. Developers must take small steps and write in a conversational tone to make it fun, and interesting. The reason is that conversational tone prevents feeling of isolation. Clark (2002) suggests that use of conversational language either directly in the program or via an agent seems to stimulate very ingrained unconscious social conventions that lead to deeper learning. Developers must also realize that OER-based courseware is different from traditional learning and interactivity is must to make it interesting. Relying too heavily on texts and book-based tutorials will leave learners with bad taste. Developers can put added value in OER-based courseware by inculcating resources such as- interactive media and educational games, relevant essays or articles, and quick-reference guides (Brandon, 2005). Developers must also keep in mind that animations and heavy images do not make OER-based courseware of better quality. The useful principle in this regard will be to keep the courseware short, make it easy and deliver small snippets of information.

**Conclusion**

Phillips, Ahmed and Kaur (2005) observe that content and more importantly its design in prompting cognitive activities among learners should be the core business of any courseware. This observation is equally true for OER-based courseware. A search of available literature on OER reveals that there are only few resources that talks about enhancement of pedagogical quality in OER-based courseware. In absence of any practical guidelines and principles about pedagogical quality assurance, developers often struggle to produce pedagogically sound courseware. Considering this dilemma, present paper outlined and discussed a number of useful principles for design and development of pedagogically sound courseware. Researcher hopes that discussed principles will help the developers to enhance the pedagogical quality of OER-based courseware and make them more useful and meaningful for schooling and learning purposes.

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The openness of the University of the Philippines Open University: Issues and prospects

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Abstract

This paper is a self-reflection on the state of openness of the University of the Philippines Open University (UPOU). An exploratory and descriptive study, it aims not only to define the elements of openness of UPOU, but also to unravel the causes and solutions to the issues and concerns that limit its options to becoming a truly open university. It is based on four parameters of openness, which are widely universal in the literature, e.g., open admissions, open curricula, distance education at scale, and the co-creation, sharing and use of open educational resources (OER). It draws from the perception survey among peers, which the author conducted in UPOU in July and August 2012. It also relies on relevant secondary materials on the subject.

Keywords: Openness; Open University; University of the Philippines Open University (UPOU)

Introduction

The University of the Philippines Open University (UPOU) has been in existence for the past eighteen years. UPOU is envisioned to be a leader in open and distance e-learning (ODeL) in the Philippines and in the region. Its mission is to provide Filipinos and other lifelong learners everywhere access to quality higher education through innovative methods of teaching and learning that are responsive to their needs as well as to development priorities of the country and the global community. It upholds the values of scholarship, academic excellence, academic freedom, humanism, social responsibility, and service to the nation. As a graduate and research university, UPOU offers as of date, twenty-six graduate and three undergraduate programs in the fields of Education, Information and Communication Studies and Management and Development Studies. It has an average enrollment of 2,800 students per term.

UPOU is one of a handful of open universities in the region that have maximized the power of web-based technologies for teaching and learning. In recognition of its innovations in ODeL, the Information Technology and eCommerce Council has designated UPOU as the National eLearning Competency Center. The Commission on Higher Education (CHED) has also designated it the National Center of Excellence in Open and Distance Education. MyPortal or UPOU’s learning management system (LMS) and virtual classroom, was also adjudged by the APEC Digital Opportunity Center as one of the top 10 best in e-practice in Asia.

Despite these achievements, what “openness” defines the UP Open University? Is UPOU really “open”?

Metrics of openness

Inspired by the inaugural speech of the first Chancellor of the UK Open University, Lord Crowther, in 1969, who defined the meaning of “open” in the UK Open University as “being open to people, places, methods, and ideas,” the dimensions of “openness” have generally revolved around “open admissions; distance learning at scale, and open curricula” (Daniel, 2011). Recently, a new
component has been added to include open access (OA) and open educational resources (OER), which include the “freedom to run programs, to study how programs work and change it, to distribute copies, especially those that have been modified.” (Dhanarajan, 2012). The latter updates the rhetoric of “openness” to the new movement called OER, which McAndrew et al. (2010), Rossini (2010), Villamejor-Mendoza (2010) and others predict as the likely wave of the future.

Open admissions generally require no specific requirements for entry into a programme of study. It also implies recognition and accreditation of prior learning (APL) and work experience as relevant antecedents to the prospective student's end goals. Open curricula may include a sense of studying in one's own pace and place, selecting the modules one wants to study, and stacking those to a bachelor and graduate programs. It also implies entry and exit points in the curriculum and the possibility of constructing one's own curriculum, using stand-alone courses or other courses that can be combined to a full degree (Distance Learning Portal, n.d.).

Open educational resources meanwhile are “digitized materials offered freely and openly for educators, students and self-learners to use and reuse for teaching, learning and research” (OECD, 2007). They are “technology-enabled, open provision of educational resources for consultation, use and adaptation by a community of users for non-commercial purposes” (UNESCO, 2002, under-scoring mine). They include learning objects such as lecture materials, references and readings, simulations, experiments and demonstrations, as well as syllabi, curricula and teacher's guides (UNESCO, 2002).

OERs are generally spoken in the same breath as open access (OA) and open education (OE) movement. Open Access has grown into a movement advocating the bringing of knowledge to as many people as possible for free and in the end, improving the quality of education worldwide. OA is a “knowledge-distribution model by which scholarly, peer-reviewed journal articles and other resources are made freely available to anyone, anywhere over the Internet” (Rossini, 2010).

It has grown simultaneously with the OE movement, which is based on a set of core values shared by a remarkably wide range of academics: that knowledge should be free and open to use and reuse; that collaboration should be easier, not harder; that people should receive credit and kudos for contributing to education and research; and that concepts and ideas are linked in unusual and surprising ways and not in the simple linear forms that today's textbooks present (Baranuik, 2007).

OE promises to fundamentally change the way that authors, instructors, and students interact worldwide. The OE movement takes the inspiration of the open source software movement (GNU Linux, for example, [Raymond, 2001 as cited in Baranuik, 2007]), mixes in the powerful communication abilities of the Internet and the World Wide Web, and applies the result to teaching and learning materials like course notes, curricula, and textbooks.

Objectives and methodology

This paper is an exploration into the openness of the UPOU. It describes the state and the varied dimensions in the meanings and practice of “openness” at UPOU. Likewise, based on the four main parameters of openness above, it unravels the causes and solutions to the issues and concerns that limit its options to becoming a truly Open University.

As a self-reflection of UPOU as an Open University, it is based on the results of the perception survey among peers conducted by the author in July and August 2012. The survey aims to get the viewpoints of UPOU academic personnel on four general topics: a) the general notion of openness; b) specific measures or parameters of openness; c) gradations of openness in UPOU; and d) major challenges and constraints and solutions to making UPOU more truly an open university.

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It surveyed all 30 regular faculty members and academic personnel of UPOU (or 20% of some 150 total faculty in charge (FIC) per term, most of whom are affiliate faculty members from other constituent units (CUs) of the University of the Philippines System). Being its organic and full-time members, they have more stakes and say in the present and future directions of UPOU. Of the 30, only 15 or 50% responded.

As a perception survey, it is limited to the views articulated (some generally; some sketchy) in the survey. Thus, this was complemented or triangulated with a review of relevant secondary materials related to the topics at hand, e.g., laws, regulations, UPOU Reports, Catalogues, website, others; as well as with the author’s insider insights, being a participant herself in the workings of the UPOU.

**Concept of openness and open university**

**UPOU, open learning, open university and distance education**

UPOU is an integral part of the University of the Philippines (UP) System. Not a stand-alone University, it is the fifth constituent university of the UP System. Established in 1995, it is the only CU of UP that offers quality higher education through open learning and distance education. The rest are residential, traditional brick and mortar universities offering programs on natural sciences, engineering, social sciences, arts and humanities, fine arts and liberal education, law and medicine, health sciences, agricultural sciences, fisheries, cultural studies and the like.

Open learning refers to a philosophy of learning that is quality-assured, open to people, methods, places and ideas and is highly flexible and learner-centered, enabling the latter to learn at a time, place and pace which satisfy the person’s circumstances and requirements (Angara et al., 2010). It also seeks to remove all unnecessary barriers to learning, while aiming to provide students with a reasonable chance of success in an education and training system centered on their specific needs and located in multiple arenas of learning.

Distance education (sometimes referred to as “distributed learning” or “distance learning”), meanwhile, is any educational process in which all or most of the teaching is conducted by someone geographically removed from the learner, with all or most of the communication between teachers and learners being conducted through electronic or print mediums (UNESCO, 2006).

As an autonomous CU, UPOU adheres to the highest standards of academic excellence, guarantees academic freedom and encourages social responsibility and nationalistic commitment among its faculty, students and staff (UP Board of Regents (BOR) 1995). As an integral part of the UP System, however, it is subject to the academic and other standards, budget allocation, processes and guidelines of the UP System. Thus, it is not completely autonomous as it hopes to.

UPOU nevertheless is the only Open University in the Philippines, as opposed to a Distance Education (DE) institution. An OU is legally defined as “a higher education institution (HEI) that is a separate, autonomous and degree-granting academic entity which employs operational procedures and strategies of an open learning institution.” A DE institution, meanwhile, is “a subsidiary of an HEI which offers DE programs, but is not qualified to be an Open University, and whose degrees are awarded by the HEI (Angara et al., 2010).

At present, there are 18 DE and only 1 OU in the Philippines, e.g., UPOU (CHED 2012). The UPOU is more accurately an open university offering academic programs and granting degrees through open and distance education (ODE), and recently, through open and distance e-learning (ODeL).
General notion on the “openness” concept

Openness as a concept has crept up on our educational systems. UNESCO (2006) defines openness in learning as one that “frees learners from constraints of time and place while offering flexible learning opportunities. For many students, open and distance learning (ODL) is a way of combining work and family responsibilities with educational opportunities.” Likewise, as earlier mentioned, Crowther (1969) defines the meaning of “open” in the UK Open University as “being open to people, places, methods, and ideas.” Dhanarajan (2012) adds the movement called OER, which implies “the freedom to run programs, to study how programs work and change it, to distribute copies especially those that have been modified,” to these dimensions of openness.

The results of the 2012 survey among peers reveal conformity with these basic parameters and more. To wit:

1. Openness as “a mindset and concrete action made evident through systems and processes in a) levels of decision-making, programs, pedagogies and methodologies; b) use of technology and innovative solutions in the way we work—teaching-wise and administrative-wise; and c) institutional linkages. This openness is not incidental nor coincidental—it must be explicit, planned and done systematically because its aim is to transform traditional and residential based mindsets and ways of working. Openness to happen requires strategic planning, innovative methods of work and solid investment (plus choice) in technology usage and infrastructure.”

This perception is instructive in so many ways. Coming from a system dominated by conventional residential setting, openness is construed here as an alternative to established mindsets and ways of doing things. This view expects open universities to not only be at par with traditional paradigms but also to influence and redefine mainstream standards with innovations and developments present in alternative learning environments like OUs. This not only recognizes the inherent higher expectations on OUs. This also calls for a more programmatic and progressive approach to doing things and laying the foundation of newer, better, more innovative systems. This builds on old systems and recreates new standards, which do not exist before.

2. Openness as conforming with universal definitions, and which include the following:

a) Openness as espousing an open philosophy specifically in terms of what courses to take, when to take it, how to take it. Openness in terms of a more open admission policy, more open exit policy. Openness is manifest in terms of open access to learning resources

b) It is open to all who would like to study, regardless of age, ability, sex, race, religion, etc. Students are provided with very comfortable learning environment and conditions such that they could study at their most convenient time and place. It is open to available teaching methods and tools while open to students’ views and ideas. It is distance education at its best

c) It is also characterized by a free and mutual exchange of knowledge unhampered by traditions, paradigms, structures, distance, hierarchy, class, age, gender and economic barriers

d) Openness also refers to openness in the length of time to complete a certain course or program and in the venue within which education will take place. This is because those who consider getting education in an OU have unique characteristics, such as working people, home-based workers, differently abled, or aged, requiring a set up that does not limit time and space
e) It is anchored on the mode of learning (freedom of the students to choose a learning style that works for them), use of educational resources (freedom of faculty to use materials they think would best achieve the goals of the course), and continuous adoption of new strategies to address the needs of distance learners

f) It is ubiquitous: anytime; anywhere; any machine; anyone; any connection (individual's place, pace and time)

g) Openness is one without walls, and therefore there are no geographical constraints on admissions. It also means being open to new ideas and new ways of doing things in response to accelerated change that characterizes the world we live in today.

3. A third sense of openness is anchored on a perceived value added of open universities, e.g., a “swim or sink principle” where we let those who are interested to pursue quality education be admitted in a degree program without an admission test requirement (open admission); but of course, the operation and delivery of contents should be guided with policies, rules and regulations. It is here “where the contribution of the Open University can be measured especially if there are students who at the start do not know how to swim but because of the training or learning they got from the university, will in the end be winning in swimming competitions” (Villamejor-Mendoza, 2012).

These general notions articulate not only the standard characteristics of openness found in the literature but also an aspiration to be different from the mainstream residential conventional systems of education in order to capacitate and empower learners regardless of their basic qualifications. This springs from an alternative paradigm in UPOU that wishes to influence mainstream conventions and transform the latter’s mindset of its seeming monopoly of contributions in shaping minds and educating all for development. It is serving notice that the UPOU is also a valuable resource to contend with, having hurdled the same standard of academic excellence as the rest of the CUs of the University.

Openness: Specific parameters

The “open” nature of distance learning might be formally institutionalized in such policies as open admissions, and freedom of selection of what, when and where to learn. This openness is also seen in relatively flexible organizational structures, delivery and communication patterns as well as the use of various technologies to support learning (UNESCO, 2006).

The 2012 survey results are not tangential to these general ideas, to wit (Table 1):

These articulations mean that ideally, in open admissions OU students should get in without any entrance and admission exams. There should be no entrance hurdles, academic pre-requisites and barriers that would hamper one’s capacity to study in the University. Prior learning and equivalency of learning, competence and expertise should be recognized and accredited using credible validation mechanisms and processes. Age, ability, sex, race, religion, and other personal attributes should not hinder anyone from being admitted. There should also be open registration where there are no deadlines; the student can register anytime and can be assessed for her/his performance anytime.

The ideal of open curricula is manifested in student-constructed curricula and individual learning plans. Students have a freehand to choose which subjects to enroll and they are allowed to negotiate, design, and propose tailor made or customized curricula in the form of Independent Learning Plans. The University, meanwhile, should offer courses that provide a wide range of competencies in varying disciplines that can cover different interests and can respond to varying realities and issues of the society at a given time. It should also consider Open Assessment where it credits
Distance learning is related to open curricula and is perceived by the respondents as a deviation from the traditional mode wherein learners and teachers meet in the confines of a classroom. It makes use of effective and relevant technologies in course delivery, hence teaching and learning are not limited by time, space, and geographical locations. It uses various forms and mediums of instruction and learning such as print, media, computers and Internet, video and audio conference equipment, and learning management platforms such as Moodle to enable online discussion, more interaction and participation. Here, there may also be Open Instruction and “live teachers” in the form of Massive Open Online Courses (MOOCs).

In terms of content, pedagogy and management, there should be flexibility in content delivery (but not in the quality as a very high UP standard of academic excellence should be maintained). Students should be given the opportunity to choose the best way to receive the content: whether online, face-to-face or blended.

OERs, meanwhile is ideally believed to mean a culture of sharing in a global community of learners and include the publication of print, multimedia, software, under open licenses like the Creative Commons and the maintenance of or participation in a repository system for OER. It may also mean creation of open software projects.

To a greater extent, these specific attributes of openness are standards from where the academic personnel hope to benchmark UPOU’s actual practice. These should guide UPOU on how close or far its policies and practices are in being and becoming a truly open university.

The gradations of openness in UP open university

Having been asked on their general notion and specific parameters of openness, the respondents were then asked if UPOU exhibit these parameters and how. Their answers were validated with what seems to exist on the ground based on secondary and other materials.

Table 1: Parameters of Openness in Open Universities

<table>
<thead>
<tr>
<th>Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Openness to learners from all backgrounds, ages, sex, origins, education; Easing access to learning through distance education; Openness to the use of OER and sharing of resources; Openness to the development of new curricula to meet emerging demands</td>
</tr>
<tr>
<td>No barriers and limitations when it comes to admission, curriculum, manner of offering, methods and materials used in teaching and learning, and practically in all aspects. It should be open to people, places, methods, and ideas</td>
</tr>
<tr>
<td>Students are free to enroll in any programs without satisfying specific program requirements such as entrance exams or general weighted average</td>
</tr>
<tr>
<td>Open curricula where students can choose when and what courses to take within the program; Distance learning at scale or using effective and relevant ICTs in course delivery, hence teaching and learning are not limited by time, space, and geographical locations; OER use where OUs are not only expected to be OER users, but also as developers of OERs that can be freely shared through open licenses which facilitate use, revision, translation, improvement and sharing by anyone</td>
</tr>
<tr>
<td>Open admissions. Open-ended timeframes and schedules. Open-ended pedagogies, i.e., decisions on when, where, how and what to learn are open to the learners based on curricula and resources developed or complied by a faculty member. Open educational resources</td>
</tr>
<tr>
<td>Open exit. Open access to learning resources. Flexible courses.</td>
</tr>
</tbody>
</table>

Open admissions

Open admission appears as an ideal UPOU has to aspire for intensely in the future. As shown in Fig.1, some 47% of the peers believe UPOU is not open at all in this aspect; and 20% believes it is only aspiring to be open. This can be explained by the following:

a) **UPOU requires a number of admission requirements before applicants are admitted.**

UPOU has 29 academic programs, 26 of which are graduate degrees. Of the 29, five programs have admission exams: 1) a Graduate Admission Test (GAT) for the Master of Public Management (MPM); 2) the Doctoral Admission Test for Education (DATE) for the PhD Education; 3) the UP College Admission Test (UPCAT) for all fresh high school graduate-applicants of UPOU’s Bachelor of Arts in Multimedia Studies (BAMMS) and Bachelor of Education Studies (BES); and 4) an Undergraduate Admission Test (UgAT) for the Associate in Arts (AA) program.

The rest have other admission requirements screened by Admissions Committees across programs at the undergraduate and graduate levels (Table 2):

Many of these are patterned after the residential program requirements.

b) Accreditation of prior learning (APL) is a principle subscribed to by UPOU. However, it is not yet widely practiced.

Except for the ALS accreditation and equivalency scheme, which is recognized for admission to a bachelor’s program, APL’s implementation is not yet systematically programmed nor operationalized in the University. Another scheme at the tertiary level, e.g., the Expanded Tertiary Education Equivalency and Accreditation Program or ETEEAP⁴ has possibilities of being incorporated in the accreditation practice. However, the mechanisms are not yet in place.

However, UPOU is also construed as “open as practically possible,” i.e. for programs without admission tests, its admissions policies may be considered liberal. It is also open to all potential learners, regardless of age, gender, ethnicity, religion or political affiliation. Uniquely UPOU, it has
been accessible to many (political) prisoners in the past, to those working in far-flung areas and are overseas, and to more women and the elderly.

**Open curricula**

Some 74% of the UPOU peers believe that the UPOU curricula are not open at all (Fig. 2). This is because our academic offerings are mostly structured and institution-prescribed, which have gone through System-regulated processes of curriculum development, revision, redesign and approval. The opportunity for students to construct their own curricula and individual learning plans is not yet present. In addition, most programs still follow certain policies such as maximum residency rule, which does not observe openness as to the pacing of the learning process, e.g., “at a student’s own time, pace and place.”

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Table 2: General Admission Requirements of UPOU Programs

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Undergraduate Programs</th>
<th>Graduate Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational Attainment</td>
<td>High School Graduate or certified passer of the Alternative Learning System (ALS) Accreditation and Equivalency Test for the secondary level</td>
<td>Baccalaureate degree (in related field) for Graduate Certificate, Diploma or Master’s; Master’s degree (in related field) for PhD</td>
</tr>
<tr>
<td>Work Experience</td>
<td>None</td>
<td>Preferably with relevant work experience</td>
</tr>
<tr>
<td>Admission Exam</td>
<td>Pass the UPCAT or the UgAT</td>
<td>Pass the GAT for the MPM or the DATE for PhD in Education</td>
</tr>
<tr>
<td>Others</td>
<td>Complete an online DE Readiness Module</td>
<td>Have a GPA of 2.0–1.75 or better</td>
</tr>
<tr>
<td></td>
<td></td>
<td>May be required to undergo a bridge program or enroll in prerequisite courses before enrolling in the program</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Conditional admission allowed</td>
</tr>
</tbody>
</table>

Source: UPOU Catalogue 2011.

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Figure 2: The Openness of UPOU Curricula


*Open Praxis*, vol. 5 issue 2, April–June 2013, pp. 135–150
A respondent even thinks that in this respect, UPOU is close; in fact it appears that UPOU is just a residential CU with programs being offered online. This may partly be explained by the fact that the faculty and curriculum designers at UPOU are themselves products of traditional programs and would have more significantly anchored their notions of quality programs based on their own traditional experiences. Also, the standards that exist are mainly residential-based or oriented. Those for ODeL from where to benchmark UPOU offerings and operations are still evolving. If there will be one that is OU-centered, it may take long for the academic leaders of the UP System to embrace these standards as the System’s own.

Nevertheless, others would find UPOU as still ‘fairly open’ as there is ample number of programs that adult learners can choose from. This menu includes disciplines from development and management studies, information and communication studies, and education and literacy. New fields (relative to the Philippines) are being pioneered, explored and trail-blazed. The latter include international health, land valuation and management, and education studies. In the near future, these may include ASEAN Studies, International Heritage Conservation Studies, the World Languages and Techno-entrepreneurship.

In the same vein, many of the UPOU curricula have options for multiple entries and exits using the ladderized and conjoint models. These would allow for more choices and freedoms for the students, e.g., when to exit, what to apply, whether non-degree stand alone courses, certificates, diploma, master’s or doctoral programs, continuing professional education, non-formal courses and the like.

**Distance education at a scale**

The only feature of openness that UPOU “strongly” exhibits is distance education. It is perceived as open in this respect to the extent of 71% (see Fig. 3) because by its very nature, it has been able to deviate from the traditional mode where teachers and learners meet in the confines of a physical classroom.
Various forms and mediums of instructions are now being used such as print, media, computer and Internet, video, and audio conferences. All our courses are now being offered online, using the IVLE (integrated Virtual Learning Environment) in 2004–2007 and the MyPortal LMS from 2007 to present. The latter is based on open source software called Moodle (Modular object-oriented distance learning environment), which has since been enhanced and reconfigured to meet the demands of 21st century education and learners. Courses are in what we call “walled garden” LMS.

Distance education content, pedagogy, and management in UPOU have successfully followed the latest trends and are not far behind other leading open universities. UPOU has evolved from generation 1 (face-to-face) DE to the generation 3 (virtual University). It has learning and testing centers all over the country and in 56 locations in 45 countries around the world.

The content, pedagogy and management are more updated with the application of the resource-based (RB) course package (RBCP), use of web applications (e.g. WizIQ, E-Portfolio, Blogging), use of media sharing sites (e.g., Facebook, YouTube) and use of RB learning and integration of OER and other content from external sources.

However, DE management still follows the UP System’s academic and administrative policies in aspects such as, among others, grading, graduation, residency, course credits and faculty load policies.

In addition, since UPOU is largely a graduate university with enrollment of only 2,800–3,000/term as of date, it offers DE at a smaller scale compared to other (mega) DE universities in Asia. As many are aware, not many would need advanced degrees compared to a basic tertiary or bachelor’s degree.

OER

UPOU advocates knowledge sharing and co-creation through OER. Its existing copyright policies on instructional materials though are still proprietary. It does not have an equivalent to MIT’s Open CourseWare (OCW), or UK Open University’s OpenLearn program. It does not have a book distribution policy like Athabasca’s dual publication under Creative Commons Non-Commercial free digital copy and sale of printed materials. Neither does it contribute to opensource software development despite its being a beneficiary of some of these software projects. It is still weak in implementing the vision of OER advocacy: Make instructional packages accessible to various publics through collaborative arrangements, institutional agreements, and other appropriate mechanisms.

UPOU nevertheless, has a culture of sharing its knowledge products, despite its Intellectual Property (IPR) regime. This is manifest, through research dissemination in conferences, seminars and colloquia, and in the publication of monographs and working papers accessible at its webpage and free online. It also has a UPOU Networks, a web-based TV station hosting video and other multi-media materials for the general public.

In addition, its virtual classrooms are venues for co-creation of knowledge. Its learners, both faculty and students, contribute in knowledge building and management through the discussion forums, chat rooms, wikis and other collaborative mechanisms in its LMS, e.g., glossary-building, games, conferencing, etc. These are also venues for the use and sharing of OER materials as complementary reference materials to enhance and update online teaching and learning.

Its use of the Resource-based approach to course development is also a step towards OER sharing and distribution. It is slowly inculcating among its stakeholders the culture of mining and populating the Web for academic purposes. It has also encouraged research sharing online, in order that the proportion of scholarly materials in the Web may increase.

Also, UPOU has a culture of collaboration and partnership for the creation, use and sharing of resources and exchange of ideas, e.g., a master’s program (MA ASEAN Studies) developed by
OU5, a consortium of five member-OUs in the ASEAN, e.g., Open University of Malaysia, Sukhothai Thammathirat Open University of Thailand, Hanoi Open University of Vietnam, Universitas Terbuka of Indonesia and the UP Open University, and a number of inter-OU collaboration with STOU, Open University of Kaohsiung and other universities around the globe.

Recently, through the initiative of its Chancellor, a Committee on Massive Online Open Courses (MOOCs), OOCs, and OER as an Extension Program of the University has been constituted to draft guidelines and plans to contribute to the OER Movement.

Thus, at UPOU, many are optimistic that a more informed and committed culture for OER use, creation, and sharing will happen in the near future. Many are of the opinion that UPOU is “getting there,” and leading the advocacy for OER among academic institutions in the country.

Fig. 4 provides a breakdown of this positive note, with 66% believing UPOU has made more strides in this direction.

The state of openness of UPOU

The UP Open University is at the threshold of positioning itself as a truly open university in order to serve its global community of learners and the development needs of the nation. In terms of the metrics of openness, UPOU has made strides in the dimensions DE at a scale and OER. However, it has still a long way to go in the open admission and curricula dimensions (Table 3).

To some extent, this state of seeming (un-)openness of UPOU is a function of its legal character and attribute as a graduate university. These attributes are both a challenge and an asset to address and capitalize on. Being a UP institution, it has the standards of academic excellence embedded in its academic offerings; it has no baggage as a poor cousin or an inferior university to UP. It can even claim equality and parity as a legitimate institution of higher learning and influence mindsets about monopoly of contribution to education and development.
Being part of the national university of the country, however, it has elitism tucked in its character, as it is accessible only to those who are qualified. Its accessibility to those who need higher qualifications is constrained; wiping out gains it has built in terms of being ubiquitous, flexible, virtual and technology-enhanced in its academic and other offerings.

### Major challenges in making UPOU more open

In addition, UPOU is still beset with the following major challenges:

1. **Bound by Residential-based Teaching and Learning Culture, Mindset, Policies and Standards**

   UPOU is an open university operating within the framework of a conventional university (Librero, 2006). Thus, its major challenge is itself and the system in which it was born to, which to a certain extent may not be nurturing openness.

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**Table 3: The State of Openness of UPOU**

<table>
<thead>
<tr>
<th>Parameter/Dimension</th>
<th>Status of UPOU</th>
<th>Remarks vis-à-vis Other Universities (within the UP System and other Open Universities)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Profile</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legal Character</td>
<td>Open University but not a stand-alone University with its own academic and other policies and systems</td>
<td>A constituent university of the UP System subject to the same standards, policies and guidelines of the System</td>
</tr>
<tr>
<td>Nature of Programs</td>
<td>90% graduate programs</td>
<td>Around 20% is the proportion of graduate programs in the UP System</td>
</tr>
<tr>
<td>Nature of Instruction &amp; Learning</td>
<td>Open and distance e-Learning with fully online learning management system</td>
<td>Conventional classroom instruction &amp; learning in the other CUs of UP; other OUs are in the generation 1 (face to face) to generation 2 (blended)</td>
</tr>
<tr>
<td>Enrollment/Term</td>
<td>2,800/term (of 3 trimesters and 2 semesters in an academic year)</td>
<td>Varies from 1,000–100,000</td>
</tr>
<tr>
<td>2. (Traditional) Dimensions of Openness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open Admissions</td>
<td>67% Not Open</td>
<td>Practice based on System-defined policies on curriculum development and other academic matters</td>
</tr>
<tr>
<td>Open Curricula</td>
<td>74% Not Open</td>
<td>-do-</td>
</tr>
<tr>
<td>DE at a Scale</td>
<td>71% Open</td>
<td>Largely because it was instituted as the only CU with ODeL as the mode of delivery/pedagogy</td>
</tr>
<tr>
<td>OER</td>
<td>66% Open</td>
<td>The virtual university is positioned to lead in the OER movement</td>
</tr>
</tbody>
</table>
Being an integral part of UP System, its financial and other resources are tied with the System’s. Its plans and programs, particularly its academic programs, are expected to be consistent with UP policies and processes, and subject to the regulations of higher authorities and its Board of Regents. It may enjoy delegated authority in some aspects of governance, but in general, with “One UP” as the overarching thrust of the present administration, its autonomy as an open university may only be partial.

Being situated in a system that is crafted in the context of residential teaching, its innovative spirit may be thwarted by mainstream culture anchored on the long tradition of UP as the premier (conventional) University in the country.

In addition, reading through its creation in 1995, its mandate is “to be closely articulated with those of the other (residential) autonomous units of the University. . . it shall derive the substance, vitality and quality of its degree program offerings from the academic programs of the residential universities of the System.” (UP BOR 1995, underscoring mine).

Likewise, the foundational reason for its creation appears the potential contribution of distance education “to increase the capacity of UP to respond to the growing needs for quality UP education, even in areas where there are no UP campus.” (3rd Whereas, BOR 1995). Thus, UPOU was more a strategic tool for democratization (or “massification”) of access to higher education than an appreciation of the philosophical underpinnings of an OU and what the culture, technology and innovation of openness may deliver, revolutionize and change in the society.

2. Resultant Pseudo-Openness and Lack of Policies on “Openness”

The resultant effect is a UPOU aspiring to be open and exhibiting only the DE and OER aspects of openness. As earlier alluded to, UPOU is “open to people” because anyone can be admitted for as long as s/he meets the admission requirements. It is also “open to places” and admits anyone in any place in the world, again subject to admission requirements and interconnectivity to our virtual classrooms. UPOU is “open to methods,” especially those being practiced by other leading OUs, but its methods are fixed by existing ICT infrastructure at this time. The University is “open to ideas” but there are instances when UPOU is open to innovations but only to the extent allowed by existing policies, e.g. OER vs. IPR regimes.

UPOU does not have open admissions. Its content is not registered under the curricular commons and is very structured. Its pedagogy is characteristic of first and second-generation eLearning; the only open maybe is pedagogy due to the academic freedom of the faculty members. It also lacks policies on openness, e.g., will UPOU share its syllabi, research papers, and publications? How will it strategically collaborate for knowledge co-creation for all? Will UPOU subscribe to the Creative Commons? How shall it accredit prior learning? How shall it open the choices of its global learners? How will it enhance its pathways and bridges, multiple entries and exits?

3. Other Challenges and Constraints

The other serious obstacle is the young history of alternative learning systems (ALS) in the country, which affect the way our policy and decision makers and even ordinary learners view distance education and open universities. Although being UP has embedded in UPOU unquestioned or uncompromising quality and excellence in its programs and offerings, there exists a general suspicion on the quality of ALS. The wider arena is still oriented towards the mainstream conventional classroom learning, and anything alternative or not mainstream will have a long difficult battle to prove itself and its worth.

Meanwhile at UPOU, although its academic administrators and personnel are already indoctrinated into the culture and mindset of open education, the commitment, resolve and programmatic
actions to pursue and sustain an open movement towards a truly Open University, either within the present structure (as part of the UP System) or differently (as an independent and separate Open University of the Philippines), remain a challenge. Many policy pronouncements within UPOU and the UP System have remained calculated and cautious.

**Conclusion: prospects in making UPOU a truly open university**

This paper is a self-reflection on the state of openness of the UP Open University. This was done not only to explore the aspects and gradations of openness of UPOU, but also to unravel causes and solutions to the issues and concerns that limit UPOU’s options to becoming a truly open university.

Although UPOU has gone a long way from the School on Air in the late 1980’s to the Schools of Distance Education in the 1990s to the UP Open University at present, this paper has resonated the truth, which we all knew all along: that despite its revolutionary transformation into the pioneer and leader open and distance e-learning graduate university in the country, it is still far from being an OU in terms of being open in its admissions, curricular offerings, DE at a scale and OER policies and practice. UPOU, however, favorably exhibits openness in offering DE content, pedagogy and management, at a relatively smaller scale than its counterparts around the globe.

This state of affairs will continue as long as UPOU remains an OU within a conventional university system. This complicated existence may be incrementally addressed (Status Quo) or may require revolutionary approaches (Separate OU and more).

The latter would include gradually influencing the mindset of the wider public, the UP System and other residential CUs, and other authorities in the country, on the favorable contributions of ALS, distance education and open universities. This can also be through advocacy campaigns for new and equally higher standards for ODeL, based on international standards, best practices and accreditation processes, so that UPOU is benchmarked not among its residential counterparts but among its peers in ODeL.

UPOU may slowly influence the traditional conventional education system with international best practices already embedded in the best OUs all over the world, so that it may be able to remove barriers to decision-making and make education truly accessible and open, suited to context and needs of 21st century learners. UPOU must also commit and work towards an open movement and revolutionize the ways it operates as an open university. Or, it aspires to be totally autonomous and not subsumed within the UP system.

The path to true openness has taken ground. The UP Open University will get there in due time and as long as it continues to reflect on its circumstances and arm itself with resources, expertise, passion, commitment, resolve and vision to stay open and be among the best Open Universities in the world.

**Notes**

1. UP was designated as the National University in the country in 2008 (RA 9500) although it has been the de facto premier university since its creation in 1908. The UP Board of Regents or BOR is the highest policy making body of the University.
3. The ETEEAP is a comprehensive educational assessment program at the tertiary level that recognizes, accredits and gives equivalencies to knowledge, skills, attitudes and values gained by individuals from relevant work. It is implemented through deputized higher education institutions that shall award the appropriate college degree.
Beneficiaries must be Filipinos who are at least high school graduates. They must have worked for at least five years in the field or industry related to the academic program they are obtaining an equivalency. They must also be able to show proof of proficiency, capability and thorough knowledge in the field applied for equivalency (CHED 2009).

Since its existence in 1908 until the present, the University of the Philippines System, being a standard by itself, is self-regulated. It is not subject to the regulation of the Commission on Higher Education (CHED), except for reportorial matters, particularly its inclusion in reports as part of the State Universities and Colleges (SUCs) for budget purposes.

This excellence is recognized not only within UP and the country, but also outside and in the Asian region, as legislators and other policy makers have been looking up to UPOU as the premier Open University. There are even moves in the Legislature to designate UPOU as the National Open University of the Philippines, vesting upon it the mandate of advancing the quality of higher education through open and distance e-Learning.

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From resistance to acceptance and use of technology in academia

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Abstract
The phenomenon of faculty's resistance to use technology in higher education is the focus of this research as a secondary reading of the existing relevant research with the purpose of analyzing factors of resistance and finding the solutions. This paper is an excerpt from a Doctoral dissertation and is focused on the causes of resistance and finding possible solutions to re-think resistance (Matrosova Khalil, 2011, 2012). It is hoped that the results of this study will contribute to the understanding of resistance factors, add to the development of the theoretical basis of re-thinking resistance, and to create a path for redirecting away from psychological defensive behavior expressed by faculty. This last aspect is characterized as part of emotional and behavioral resistance, which this research hopes to transform from a negative to a positive attitude towards change.

Keywords: Academia; Adult learners; Faculty; Resistance to change; Technology

Tell me, and I will forget.
Show me, and I may remember.
Involve me, and I will understand.
Confucius, Chinese philosopher, (551 BC—479 BC)

Methodology
The factors of faculty resistance to technology in academia will be investigated in this qualitative study by reviewing (as a secondary reading) and analyzing already existing research, and combining the many survey results of the previous research in one new analysis. This study is seen as an identification of the process of change from resistance to learning and accepting technology. This new analysis and its recommendations would be helpful for faculty and leadership in recognizing the factors that cause resistance in their institutions, thereby being able to create a path for overcoming the problem.

The purpose of this investigative qualitative study is to analyze the phenomenon of faculty resistance to technology in academia and to add to the development of the theoretical basis for re-thinking this resistance. Organizational change is needed to overcome the factors of faculty resistance in using technology. Although a majority of research is done on the factors of faculty resistance to technology and resistance to change in academia, the fact of the resistance remains. The question is: “How one can use the rich data on resistance to change faculty attitudes?” Several authors propose to “re-think” resistance to change in order to help employees go through the change process in an organization (Diamond, 1986; Piderit, 2000; Oreg, 2006). The factors of resistance vary from one research study to another, as well as the recommendations for improving this situation. There is a need to organize these factors so the picture of faculty resistance to technology can be reveal in all its details. To treat the problem one should identify its causes. The categorization of the many causes of resistance should be presented as one clear document, serving as a “blue print” for administration and leadership in institutions of higher education in order to identify...
the specific factors of resistance in their institutions, to try and find solutions to overcome those factors, and to help faculty learn about and use technology in their work. In addition, this “blue print” would be helpful for faculty to see a scope of the issues associated with resistance, understand them, and conquer them with the appropriate support of leadership from their institutions. Finally, the results of the study and its implications benefit a wider audience—the students who have the desire to learn with the use of technology, seeing as it provides them with a variety of resources and is convenient to access from many locations which allows them to balance their busy lives with the ability to advance their education.

The problem

Resistance: an opposing or retarding force (Merriam Webster Online, 2011). “Why is resistance to technology in our technological time still present?” one might ask. The fact is that some of the faculty in many institutions are resisting to learn about and using technology. In order to learn about this phenomenon three specific questions were identified: 1. What are the factors that contribute to faculty resistance to technology in our technologically advanced time?; 2. How can faculty, as adult learners, be prepared to understand technology and learn about its use in instruction?; and 3. How can faculty reluctance or un-readiness to technology be overcome cognitively through participation in change?

Undeniably, educational technology has been changing higher education on a global scale, and will continue to do so. Online learning as one of the forms of distance education has become a standard way of learning in many colleges and universities, and is changing the way faculty teach and students learn (Kidney, 2004; D’Arcy, Eastburn, & Bruce, 2009; Smith, Schneider, Kontos, Kuzat, Janossy, Thurmond, K. et al., 2007). The problem is that in many colleges and universities, there remain faculty members who resist using educational technology in teaching, communication and research. Many authors contributed to the research of resistance in academia (Berge, & Muilenburg, 2001; Howard, Schenk & Discentza, 2002; Rodriguez, 2005; Shelton & Saltzman, 2005; Moerschell, 2009). This study will investigate both resistance and methods for changing faculty behavior towards the use of technology. The available research on the factors behind faculty resistance to change their current ways of teaching and adapting to the use of technology in instruction, points to the need for continuing research on how to overcome those factors of resistance and bring educational technology to the classroom. Also, the available research shows that there is lack of any general theory of resistance to technology (Oreg, 2006). This study aims to fulfill such a deficiency, and to contribute to the development of the theory of resistance to technology.

Literature review and theoretical background

The survey of literature for this study was focused on several issues:

1. The evolution of technology in teaching and learning.
2. The causes and the factors of faculty resistance in using technology in their work.
3. The theories of teaching adults and the necessity of using technology while teaching adults in academia.
5. The role of academic leadership in creating effective and technologically advanced learning environments for all—adult students and faculty equally.
The evolution of technology in teaching and learning

Online learning has been gaining popularity due to its convenience and allowance in accessing a wealth of resources in a short amount of time. Shelton and Saltsman (2005, p. 6) justified online learning as effective for the institutions of higher education for three reasons: 1. To fulfill a mission of delivery to a larger service area; 2. To accommodate population growth by increasing enrollment without spending money on construction and property; and 3. To reach a wider student population by gathering more potential students who otherwise would not be able to physically attend classes. The educational methodology of online education is considered no longer experimental and benefits of such learning with the easy access and flexibility understood by many institutions of higher education (Berge & Muilenburg, 2001). Yet, some institutions are not making “changes necessary to maximize the effectiveness and efficiency of online learning” (Howard, Schenk, & Discentza, 2002, as cited in Shelton & Saltsman, 2005, p. 7). Shelton and Saltsman (2005) identify several issues, which if removed, will improve the effectiveness of online education in the future. Those identified issues are: lack of skills among personnel, organizational structure and institutional culture that resists change, and funding (Berge & Muilenburg, 2001; Shelton & Saltsman, 2005).

The causes and the factors of faculty resistance to the use of technology in their work

Several issues were identified through the survey of literature. Moerschell (2009) in the article Resistance to Technological Change in Academia clearly stated the array of attitudes towards technology from “the old timers who like things as they are” (para. 8–9) to the lack of awareness and interest to envision the benefits of technology. Moerschell (2009) pointed out several reasons of resistance, including: a. limited vision of the future; b. comfort with the way things are; c. deficits in information and communication; d. the individual’s nature to be uncooperative; and e. that they do not have the skills to do what the leader is proposing (Bergmann & Brough, 2007, as sited in Moerschell, 2009, para. 13). Moerschell (2009) also reported that the culture in academia is a serious factor of resistance to technology and it “epitomizes this behavior,” and is “a necessary systemic component of implementing technological change” (para. 22). This issue was addressed by many authors such as Bergmann and Brough (2007); Cameron and Green (2004); Horn (2002); and Kitchen and Rodriguez (2005).

The majority of resistance literature is focused on its causing factors, specifically the adoption of online learning. Berge and Muilenburg (2001) identified 64 barriers or factors of resistance to distance education that were grouped into 10 factors (table 1).

Harvey and Broyles (2010, p. 112, Table 23.2 Resistance Factors) identified 20 factors of resistance and pointed out the antidotes to them (table 2).

The theories of teaching adults and the necessity of using technology in teaching adults in academia

Faculty along with their students are viewed in this study as adult learners, and therefore the theories explained below are fully applicable to faculty as adult learners. There are several theories that construct the base of this study. In recent years, the cohort of adult learners in academia has changed (Palfrey & Gasser, 2008, Erickson, 2010). In order to effectively teach their adult students, faculty must learn about and implement technology in their teaching. The several theories that contribute to the understanding of the specifics of adult learners and their education used in this study are: Knowles’ Theory of Andragogy (1980); Bloom’s Cognitive Taxonomy (1956); Rotter’s Internal-External Locus of Control Scale (RIELC, Rotter, 1966, 1975), Kolb’s Learning Style Theory.
Among the theories of teaching adults, Knowles’ Theory of Andragogy (1980) stands out the most. This theory explains the way adults learn and received global wide recognition and support in higher education and professional development. Taylor & Kroth (2009) summed up the characteristics of andragogy explained by Knowles as:

- learner-focused education in contrast to pedagogy as teacher-based education;
- where learners are more self-directed than teacher-directed;
- an instructor is a facilitator of learning rather than an originator of it;
- an environment where adult instructors and their adult students are engaged in challenging, passionate, and creative activity (Taylor & Kroth, 2009).

The theory of andragogy by Knowles has transformed higher education of today and the views of how adults are learning (Taylor & Kroth, 2009).

Another method that can be used in teaching adults/faculty is Bloom’s Cognitive Taxonomy (1956) that has direct application to the issue of faculty’s learning about technology. This educational theory used in teaching adults was designed to present systematic classifications of cognitive operators (Halawi, Pires, & McCarthy, 2009). Bloom classified simple and complex cognitive operations and categorized the three distinctive domains of behavior: cognitive, affective, and psychomotor.

<table>
<thead>
<tr>
<th>#</th>
<th>Factor</th>
<th>Issue</th>
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<tbody>
<tr>
<td>1</td>
<td>Administrative structure</td>
<td>Management of distance learning is problematic</td>
</tr>
<tr>
<td>2</td>
<td>Organizational change</td>
<td>Most organizations are resistant to change</td>
</tr>
<tr>
<td>3</td>
<td>Technical expertise</td>
<td>Professional development and support</td>
</tr>
<tr>
<td>4</td>
<td>Social interaction and quality</td>
<td>Isolation of faculty and students, quality of programs, courses, and students learning and assessments</td>
</tr>
<tr>
<td>5</td>
<td>Faculty compensation and time</td>
<td>Time consuming, lack of funding</td>
</tr>
<tr>
<td>6</td>
<td>Threatened by technology</td>
<td>Replaced by technology?</td>
</tr>
<tr>
<td>7</td>
<td>Legal issues</td>
<td>Internet and copyright, fair use policies, piracy, intellectual property rights, and problems with hackers and viruses</td>
</tr>
<tr>
<td>8</td>
<td>Evaluation/Effectiveness</td>
<td>Concern over a lack of research supporting the effectiveness and evaluation of distance education</td>
</tr>
<tr>
<td>9</td>
<td>Access</td>
<td>Lack of access or concerns over equal access to courses offered via newer technologies such as Web based instruction for both instructors and students</td>
</tr>
<tr>
<td>10</td>
<td>Student support services</td>
<td>Provision of student services such as advisement, library services, admissions, and financial aid-at a distance is a critical facet of any distance learning program (Muilenburg, 2001).</td>
</tr>
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Table 1: 10 factors of resistance, Berge and Muilenburg (2001)
Table 2: 20 factors of resistance and antidotes to them, Harvey and Broyles (2010)

<table>
<thead>
<tr>
<th>#</th>
<th>Factor</th>
<th>Antidote</th>
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<tbody>
<tr>
<td>1</td>
<td>Lack of Ownership</td>
<td>Participation: In what? How?</td>
</tr>
<tr>
<td>2</td>
<td>Lack of Top Brass Support</td>
<td>Top Brass Support Payoff for Brass Support Co-option of Trusted Advocates to Top Brass</td>
</tr>
<tr>
<td>3</td>
<td>Lack of Perceived Benefits</td>
<td>Meaningful Payoff</td>
</tr>
<tr>
<td>4</td>
<td>Lack of Recognition</td>
<td>Recognition Scorecard Celebration Participation</td>
</tr>
<tr>
<td>5</td>
<td>Increased Burdens</td>
<td>Payoffs Small Steps</td>
</tr>
<tr>
<td>6</td>
<td>Loneliness</td>
<td>Collegiality Change Teams Gradualism</td>
</tr>
<tr>
<td>7</td>
<td>Insecurity</td>
<td>Enhance Security through Participation Trust Building</td>
</tr>
<tr>
<td>8</td>
<td>Norm Incongruence</td>
<td>Norm Setting</td>
</tr>
<tr>
<td>9</td>
<td>Boredom</td>
<td>Joy and Fun Celebration Participation Simplicity</td>
</tr>
<tr>
<td>10</td>
<td>Chaos</td>
<td>Continuity with Principles Perception of Control</td>
</tr>
<tr>
<td>11</td>
<td>Superiority</td>
<td>Peer Recognition Multiple Recognitions</td>
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<tr>
<td>12</td>
<td>Differential Knowledge</td>
<td>Equal Sharing if Information</td>
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<tr>
<td>13</td>
<td>Sudden Wholesale Change</td>
<td>Gradualism Trialism Celebrate Small Wins</td>
</tr>
<tr>
<td>14</td>
<td>Fear of Failure</td>
<td>Affirmation Ensure Small Successes Learn from Risk Taking</td>
</tr>
<tr>
<td>15</td>
<td>Extremes of Organizational Structure</td>
<td>Moderate Centralization Moderate Formalization</td>
</tr>
<tr>
<td>16</td>
<td>Suspicion</td>
<td>Trust</td>
</tr>
<tr>
<td>17</td>
<td>Ambiguity</td>
<td>Clarity</td>
</tr>
<tr>
<td>18</td>
<td>Leadership Skills</td>
<td>Leadership Skills Development</td>
</tr>
<tr>
<td>19</td>
<td>Inertia</td>
<td>Stress</td>
</tr>
<tr>
<td>20</td>
<td>(Anything)</td>
<td>Referent Power/Strong Trust (Harvey &amp; Broyles, 2010)</td>
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</table>
cognitive taxonomy is placed by Bloom hierarchically into six categories, and is heavily used in education:

- **knowledge**, which focuses on memorization, recognition, and recall of information;
- **comprehension**, which focuses on organization of ideas, interpretation of information, and translation;
- **application**, which focuses on problem solving, use of particulars, and principles;
- **analysis**, which focuses on finding the underlying organization, and the division of a whole into components;
- **synthesis**, which focuses on a combination of ideas to form something new, creating something unique whether verbal or physical;
- **evaluation**, which is the highest level in the taxonomy and focuses on making judgments about issues, resolving disparities or disagreements (Halawi, Pires, & McCarthy, 2009, para. 9).

One way of learning about adult learners—in the case of this research, the faculty in academia—is through the use of Rotter's Internal-External Locus of Control Scale (RIELC, Rotter, 1966, 1975), which is a system that allows one to learn about the “individuals' beliefs regarding the nature of the environment and/or their expectations about how reinforcement is controlled” (Dille, & Mezack, 1991, p. 26). According to this scale, individuals with internal lack of control believe that academic success is due to their efforts and abilities, while individuals with external lack of control believe that success depends on external factors such as luck (Dille, & Mezack, 1991). Rovai (2007) states that students with strong internal locus of control are “mostly internally regulated (or autonomous), have more interest, confidence, excitement, persistence, better performance, and show a better conceptual understanding of the material than students who are mostly externally controlled” (Rovai, 2007, para 11). The knowledge of internal-external regulators of adult learners—faculty can be used in designing the professional development courses to learn about technology.

To help faculty learn in a more effective way, they must gain knowledge about the variety of learning styles. Those learning styles are described in Kolb's Learning Style Theory (1984, 2005) which is a learning theory based on the theories of human learning and development of Dewey, Lewin, Piaget and other educational philosophers. Kolb’s identified four main learning styles:

1. **Diverging**—people who are better at generating ideas, have “broad cultural interests and like to gather information... imaginative and emotional, have broad cultural interests... tend to specialize in arts, prefer working in groups, to listen with an open minds, and to receive personalized feedback;”
2. **Assimilating**—people who are best at understanding a “wide range of information and putting it into a concise, logical form... interested in ideas and abstract concepts... prefer readings, lectures, exploring analytical models, and having time to think things through;”
3. **Converging**—people who use this learning style are “best at finding practical uses for ideas and theories... have ability to solve problems and make decisions based on finding solutions to questions or problems... prefer to experiment with new ideas, simulations, laboratory assignments, and practical applications;” and
4. **Accommodating**—people with this learning style have the “ability to learn from ‘hands-on’ experiences... act on ‘gut’ feelings rather than on logical analysis... rely more heavily on people for information than on their own technical analysis... prefer to work with others to get assignments done, to set goals... to test out different approaches to completing a project” (Kolb’s, 2005, pp. 196–197).

To help faculty, leadership and professional development departments could incorporate Rossmans (2011) Adult Learning Inventory onto preparation of the workshops on learning about technology. Rossmans (2011) noted that adult learners are often issue or problem centered rather
than subject centered. Rossmans (2011) Adult Learning Inventory correlates to Knowles (1980) Theory of Andragogy that states adults should be taught differently than children because their cognitive and learning processes are drastically different (Brookfield, 2005; Birzer, 2004; Mezirow, 2000; Cranton, 1994; Knowles, 1980; Knowles, Holton, & Swanson, 1998). This theory is globally recognized and as Lee (1998) points out, “many of Knowles’ 19 books are used as texts in adult education programs around the world” (para. 5). Rossmans (1990) reported that “An adult’s experience may interfere with the learning experience” (Rossman & Rossman, 2011). The authors observed that extensive experience in many older and experienced adults causes resistance to change, and at the same time represents a “potentially rich resource for learning and an obstacle to learning” (Smith, 1982, as sited in Rossmans, 1990).

The change resistance theory and control theory in relation to faculty’s resistance to technology

The Change Resistance Theory (Diamond, 1986; Piderit, 2000; Oreg, 2006) has been lately receiving a lot of attention in scholarly literature. Several authors propose to “rethink” resistance to change in order to help employees going through the change process in an organization (Diamond, 1986; Piderit, 2000; Oreg, 2006). The theory of resistance to change states that resistance should be viewed as a multidimensional (negative) attitude towards change and it consists of three interconnected elements: cognitive, affective, and behavioral/intentional components (Piderit, 2000; Oreg, 2006). Piderit (2000) proposes to look at the complexity of the resistance to change as a “set of responses to change that are negative along all three dimensions, and ‘support for a change’ is represented by the set of responses that are positive along all three dimensions” (para. 5).

In most of the literature on resistance authors state the factor of frustration associated with the process of change. Cartwright (1968) in the theory of frustration reasoned that:

for all goal-directed activity involves some degree of conflict…(the conflict of these two opposing forces—the driving force corresponding to the goal. . .and the restraining force of the difficulty of the job—produces frustration) yet a person is not usually frustrated so long as he is making satisfactory progress towards his goal (p. 339).

Resistance frequently can be characterized as reluctance or un-readiness and can be overcome cognitively through participation in change (Piderit, 2000). Diamond (1986) adds that preconscious and unconscious psychological defenses are obstructing learning and “illustrate compulsive, repetitive, security-oriented, error-inducing and self-sealing human behavior” (p, 544). He continues that “these defensive and adaptive tendencies usually protect the status quo and, therefore, block learning” (p. 544). Moerschell (2009) noted that collective and individual personalities affect the organizational change and that faculty resists technology because it might challenge the integrity of their scholarship. Oreg (2006) and Horn (2002) add that teachers resist change because it does not agree with their expectations and their efforts to learn about the technology, and it increases anxiety and fear. “The letting go of the old and the taking-on of the new,” the exploration of “their
fears, anxieties and defensive actions that surfaced in the form of basic assumptions, provided clients with first-hand knowledge of resistance to change interfering with learning to double-loop learn (Diamond, 1986, p. 545). He continues that the remedy for resistance “involves a cognitive realignment of resistors’ espoused theories and their theories-in-use” (Diamond, 1986, para. 18). Piderit (2000) sums up that “we should retire the phrase ‘resistance to change,’ and I advocate a new wave of research on employee responses to change, conceptualized as multidimensional attitudes” (para. 37).

The Leadership Theory and Control Theory (Ramsden, 1998) and Argyris and Schön’s (1992) Theory of Action are chosen by the author as support to the Theory of Andragogy as the main motif for the study. Ramsden (1998) asserted that it is the role of effective leaders in reframing educational organizations to address the new needs of community learners—the students and the faculty. Genuine learning requires an environment of “trust and an absence of fear, where the academics, like their students will take risks, excel, and do remarkable things” (Ramsden, 1998, p. 268). Ramsden (1998) believed that academic leadership should provide for everyone an “environment for enterprise, bold moves, and imagination—in teaching, research and professional practice” (p. 267).

The role of academic leadership in creating effective and technologically advanced learning environments for all—adult students and faculty equally

To reduce faculty anxiety, demystify technology, and promote use of technology by faculty several steps can be implemented, Gibson and Peacock (2006) contend. The researchers developed a professional development model as a website with the intention to provide practical resources for faculty to learn and to use technology. This site was designed for users with different levels of knowledge in technology—from nonusers to early adapters who are looking for new ideas (Gibson & Peacock, 2006). From the findings of the research five core areas of data emerged: 1. Amount of information; 2. Quality of information; 3. Ease of use; 4. Appearance; and 5. Usefulness of information. The summary of the inputs of the participants of the research differ according to their prior knowledge and use of technology. The beginners stated that prior to use of the self-paced website they wanted face to face interactions with the instructor to learn about the basics of using technology. The participants commented about the user friendly format, which was not intimidating to faculty as learners (Gibson & Peacock, 2006). The lessons learned from this research are that faculty as adult learners need help in learning about technology. They need continuing technical support and resources that can be re-visited again and again to master the knowledge. Faculty needs continuing assistance of professional technology development personnel to solve the arising issues and to get new ideas on technology integration into teaching (Gibson & Peacock, 2006).

Tobin (1999) presented a Practical Leadership Skills Framework (table 3).
The change factors and their use to motivate faculty members to overcome resistance to change

The change factors include three components: emotional or affective (the way people feel about the change such as frustration, anger, or fear), cognitive (ones thoughts about the change and its necessity), and behavioral (actions or intentions to act towards of change) (Oreg, 2006). This author argues that the tridimensional factors, even though interconnected, have different impact on change consequences or outcomes. The researcher was investigating the antecedents and the predictors of the resistance attitude components and the work-related outcomes. The three resistance components are detailed in table 4.

The findings of the study suggested that most important antecedents to resistance to change were employees’ sense of autonomy, challenge, stimulation such as intrinsic motivation, and trust in management. Oreg (2006) states that resistance to change decreased when employees have trust in their management. The author recommends that managers should be aware that people’s feelings about change may “predict how they will feel about their jobs… that what they do as the change takes its course could help anticipate their willingness to remain in the organization; and … later on translate into their commitment to the organization” (Oreg, 2006, p. 98). Oreg stressed that “trust in management proved to be a dominant variable in its associations with all three resistance components,” (p. 97) and that management should invest in building and maintaining the trust of their employees. The conclusion of the research is that resistance to change as a multifaceted concept should be investigated to find different forms of resistance that could “indicate...
different types of antecedents, and thus would point to different measures for alleviating resistance” (Oreg, 2006, p. 97).

The leadership of colleges and universities could use the findings presented in this paper to identify the factors of resistance specific to their institutions, and to identify the path to re-think resistance and through active participation stand alongside faculty through the change process.

### Conclusion

The focus of this investigative qualitative research is the secondary reading of the existing relevant research with purpose of analyzing the phenomenon of faculty resistance to technology in academia, the factors of resistance and finding possible solutions. To learn about such a phenomenon the three specific questions were identified: 1. What are the factors that contribute to faculty’s resistance to technology in our technologically advanced time?; 2. How can faculty, as adult learners, be prepared to understand technology and to learn about its use in instruction?; and 3. How can faculty’s reluctance or un-readiness to technology be overcome cognitively through participation in change?

The resistance of faculty to changes in utilizing technology in higher education and managing that resistance may be among the most pressing challenges for leaders in academia (Berge & Muilenburg, 2001; Moerschell, 2009). The factors of resistance vary from one research study to another research, as well as the recommendations for improving this situation. In this paper the factors identified from the previous research, as a second reading, were categorized and presented in all their details. This document may be used as a “blue print” by administration and leadership of institutions of higher education to identify the specific factors of resistance in their institutions, to try to find solutions to overcome those factors, and to help faculty learn about and use technology in their work. In addition, it is hoped, this “blue print” could assist faculty in seeing a scope of the issues associated with the resistance, understand them, and conquer them with the appropriate support of leadership of their institutions.

To treat the problem one should identify its causes. Organizational change is needed to overcome the factors of faculty resistance in using technology. Several authors propose to “re-think” resistance to change, to view the resistance as a multidimensional attitude towards change that consists of

### Table 4: Three Resistance Components, (Oreg, 2006)

<table>
<thead>
<tr>
<th>Resistance components:</th>
<th>The antecedents are:</th>
</tr>
</thead>
</table>
| 1. Affective  
2. Cognitive  
3. Behavioral | 1. Personality with dispositional resistance to change |
| | 2. Context that consists of: |
| | a. Power and prestige, |
| | b. Job security |
| | c. Intrinsic rewards |
| | d. Trust in management |
| | e. Information |
| | f. Social influence |
| | 3. Work related outcome: |
| | a. Job satisfaction |
| | b. Intention to quit |
| | c. Continuance commitment |
three interconnected elements cognitive, affective/emotional and behavioral/intentional components, and to help employees go through the change in an organization (Diamond, 1986; Piderit, 2000; Oreg, 2006). Piderit (2000) summed up that “we should retire the phrase ‘resistance to change,’ and I advocate a new wave of research on employee responses to change, conceptualized as multidimensional attitudes” (para. 37).

References


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Comparing communities of inquiry of Portuguese higher education students: One for all or one for each?

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Abstract
The purpose of this study was to report evidence obtained in a survey based on the Community of Inquiry (CoI) framework (Garrison, Anderson & Archer, 1991; 2000) carried out in different groups. The study comprised 510 higher education students enrolled in blended online courses offered through Moodle platform during one semester. It considered students from different private and public Portuguese polytechnic schools and universities. Moreira & Almeida (2011) have suggested that CoI framework is a valid, reliable, and efficient measure of its dimensions within the Portuguese population. Although similarities in aspects of social presence were discovered among polytechnic and universities students, the two groups showed some differences. In particular, it was observed that the polytechnic students appear to be a more robust community when compared to university students.

Keywords: Blended Learning; Community of Inquiry; Learning Community; Online Learning; Polytechnic; University

Introduction
Today, the large number of students per class and the traditional methods of teaching are hardly compatible with one of the most fundamental requirements of higher education—skills training. This indicates that the current teaching methods and the role of both teachers and students must be reorganized. Students are expected to acquire knowledge, gain practice and develop their competences. More and more the use of technological tools to support teachers begins to flourish as a source of continued cognitive, social and dialogical presence in the learning process. Teachers may guide the instructional process by being present and coping with the pedagogical relationship in a blended web-based learning. However, such helpful resources must convey a paradigm establishing the relationship relational climate to an effective educational experience. So, the need for a community is imperative, specifically one of inquiry, in order to promote skills and knowledge in a constructivist and collaborative environment suitable for the work of professionals, who are expected to be autonomous, active and effective in performing their functions (Garrison, Anderson, & Archer, 2000).

The CoI framework is a process model that provides a comprehensive theoretical frame able to support both online learning research and the practice of online instruction. It assumes that effective online learning requires the development of a community (Shea, 2006, cf. Swan et al., 2008; Thompson & MacDonald, 2005) that supports meaningful inquiry and deep learning. The relevance thereof is based on the fact that young people today that will assume in the future important roles in the political, social and cultural life of the world community.
In this context, the study we have developed aims to understand the workability of the CoI model, while examining its impact on the creation of blended learning online communities. To this end, we aim to explore possible relationships between face-to-face instruction, fostering a valuable pedagogical relationship providing key elements central to a collaborative learning environment, and an online teaching model enabling the creation of learning communities.

**For an effective cooperative, cognitive and self-regulated learning**

Self-regulated learning is an unquestionable vehicle for fruitful individual progress and global sustainability. Different authors and perspectives characterize self-regulated learning differently: (a) focused on an individual as a regulator of a behavior and referring to the process of becoming a strategic learner by regulating their cognition, motivation and behavior to optimize learning (Schunk & Zimmerman, 1994); (b) as co-regulation influenced by socio-cultural theory and emphasizing gradual appropriation of sharing common problems and tasks through interpersonal interaction (McCaslin & Hickey, 2001, cf. Järvelä et al., 2007); or (c) as a process of shared cognition and collaborative learning for the co-construction of shared understanding (Roschelle & Teasley, 1995).

Similarly to Järvelä, Näykki, Laru and Luokkanen (2007), our view assumes collective regulation through shared awareness of goals and solving tasks in networking.

Education is crucial to individual and social development, especially at the higher level of schooling, where the cultural environment can better fertilize the preparation of agents with greater social responsibility. In addition to the emerging changes, we will need to master specific contents, a solid knowledge base, and hard study in order to meet quality standards, be committed to social development and to be an expert in decision-making.

The tendency is to value student-centered education, use resources to provide guidance to teaching, ask each student to work at their own pace, to have open systems without formal parameters, provide curricula focused on the end-goals of students, provide a selected offer to optimize relevance, work and performance-based learning contexts, networked environments, interactive teaching, global perspectives and anticipatory educational management (Ally, 2004). This means innovating instead of resisting change in order to make Higher Education institutions more proactive and, even more importantly, to emphasize the role and responsibilities of the student community in this effort.

Despite the undeniable existence of austere educational systems centered in subject teaching and in the master role of teachers as transmitters of a theoretical and static academic culture, there have been various experiences all over the world to encourage classroom participation, cognitive enhancement and address the well-being of civil society. Some of these experiments stimulate the use of technology tools to regulate collaborative learning, like wireless networks and mobile tools, laptops, multimedia note taking, computing tools, messaging or chat (e.g., Järvelä et al., 2007).

By defending difficult initiatives to integrate innovative pedagogical ideas with the desired cognitive load and technological support, we address a scaffolding teaching model during the dynamic process of online-based instruction.

The Community Inquiry framework (Arbaugh et al., 2008; Garrison & Anderson, 2003; Swan et al., 2008) is considered one of the most promising schemes for modeling online teaching. As a broad and integrated model, it explains successful teaching, allowing the research and monitoring of learning processes in a collaborative, interactive and constructivist approach. The underlying idea of the model is that an educational Community of Inquiry is a group of individuals who collaboratively engage in purposeful critical discourse and reflection to construct personal meaning and confirm...
mutual understanding (Garrison & Anderson, 2003). In this sense, successful learning stems from three critical elements that interact with each other and are mutually influenced: the cognitive presence, the social presence and the presence of teaching. Taking into account the vast literature on these elements (e.g., Swan et al., 2008), our aim is to test our own educational experience. In other words, as we have mentioned before, we want to verify if our teaching process has a structure and organization that encourages a diversity of perspectives, promoting research, criticism and creativity in a collaborative learning environment.

We wish to enable communities of inquiry, prepare our students to be responsible and to look for the meaning of their own educational experience, through self-regulation and negotiation with the community.

Communities of inquiry in Portuguese education: looking for a triangulation in the instruction—learning process

Overall, there is a general claim that new technologies and software used in education should offer new learning opportunities allowing for a third element to consolidate those contents, turning them into effective learning experiences. This third pole would be the communities of inquiry. Motivation can, however, also be driven by technology into learning extracurricular subjects and being responsive to instructional intervention.

So far, some case studies and design experiments were carried out, for instance, on mobile technologies used for innovative pedagogical ideas and instructional design. However, only a few studies have given detailed arguments as to what these new opportunities are in terms of learning interaction and collaboration, and the exact processes that mobile tools can support. We believe that what matters and sustains the argument in applying the most modern tools for education is that students increase their opportunities to interact and share ideas, thus increasing the opportunities for an active mind in multiple contexts (cf. Järvelä, Volet & Järvenoja, 2010). So, potentially, networks and technological tools can support collaborative learning in higher education. Nonetheless, we are not familiar with this situation in our learning contexts. Therefore, we ought to approach innovation by linking some methodological introductions to the most usual ones, in an attempt to gradually introduce changes that can raise the learning patterns. The emergence of assumed and identified communities of inquiry between teacher and students are an important facilitator in this process.

We infer that the Col model, in its three presences, contributes to the construction of a learning community, potentially able to provide formative and summative feedback about the effectiveness of courses or programs with an online component.

Indeed, the Col theoretical framework represents a process of creating deep and meaningful learning through collaborative and constructivist experiences. This is achieved by developing the three interdependent elements, although cognitive growth depends strongly on social interaction and discourse to share views and exchange information. Subsequent work could explore the role of metacognition within the framework, by operationalizing the construct in its metacomponents in learning processes management, including self-regulation and the monitoring and evaluation of processing modeled by affective experience and dialogical support (Hmelo-Silver, 2003).

The learning community of inquiry needs to highlight conceptual differences between the presences in online learning contexts, as well as the dynamics between them. The identification of the processing elements that facilitate, or hinder, higher learning and the ability to solve complex learning problems has implications for the teaching practice, too. Using either the Col model or other methodological and instrumental resources, ongoing research is needed, both in a qualitative
and a quantitative approach, as other studies have done towards consistently defining communities of learning (Hmelo-Silver, 2003).

Context of study

Based on the assumptions of the theoretical model and on previous exploratory work on the CoI framework (cf. Garrison & Col.), we expect the three presences—cognitive, social and teaching—will appear distinctly, yet overlapping or related to each other for all the groups of students surveyed.

The participants in this study are undergraduate students (n = 510) enrolled during the school year of 2010/2011 in blended online courses offered through Moodle platform during one semester at different Portuguese schools (polytechnic private institutes and public universities). The study involved students of a Higher School of Education, a Higher School of Health and a Faculty of Psychology and Educational Sciences of a classic University.

In Portugal, both the universities and higher schools provide higher education. But while the main goal of polytechnic institutes is professional training and gaining practice and knowledge, universities are still oriented to the creation, transmission and dissemination of high patterns of culture, science, literature and technology through study and research in the various content areas of knowledge. Thus, in universities, especially in the classic ones, the curricula include an overload of information and cognitive workload, so that the greater demands of teaching foster receptive learning and formality, and tend to encourage higher job isolation and academic scientific preparation of students in a more traditional mode.

Based mainly on the principles of interaction and collaborative and independent learning, we sought to develop a model taking as reference the view of Garrison, Anderson and Archer (2000) based on the development of skills and student-centred learning. These were the principles that guided the organisation of education, the shaping of student and teachers’ roles, the planning, design and management of learning activities, the definition of the types of materials to be developed and the nature of the assessment of skills acquired.

The student therefore lies at the centre of this pedagogical model and is an active element, building his/her knowledge, committed and engaged in the learning process and integrated in a community of learning. Overcoming the methods and educational tasks, the different teaching situations present in this model are designed according to the student and to a learning process intended to facilitate the acquisition of skills required for living in a knowledge society, and specific skills related to the area chosen by the student.

According to this model, learning is achieved through collaborative learning strategies and is the result of joint work, shared knowledge and prospects, based on common goals and work methods agreed within the group. The aim of creating and organizing student groups is to reach the conclusion that the construction of knowledge must be socially contextualized (Garrison & Anderson, 2003).

This model also defined a new role for the teacher, to the extent that more than being a source of information, the teacher becomes a guide, a facilitator of learning who encourages students to interact in the learning community (Moreira & Monteiro, 2010).

Another principle of the model is based on the rule of interaction. In the first generations of distance learning, interaction was essentially seen as student-content interaction and student-teacher interaction. Moreover, this model extends those dynamics into a student-student interaction by creating discussion groups within each class and each virtual classroom. This means that they have to be planned in advance, and learning strategies need to be activated in order to stimulate initiative, involve students, ensure that they are committed and guide the nature of their work.
In this model, interactions are shaped as the practical basis of learning and are based on constructivist and socio-interactionist theories, as they require the negotiation of conflicts and sharing of meanings (Monteiro, 2011).

Methodological aspects

The Community of Inquiry framework has been presented as a valid and reliable instrument to measure the quality of online teaching focusing on the three important components (Klenner-Moore, 2002; Vaughan & Garrison, 2005). In that sense, although classes are large and have different course programmes, we sought to study the contribution of the model in testing the settings we have defined to promote meaningful collaborative learning. Our goal is to compare CoI measures to illustrate the three presences as our students feel them, in each targeted community and in all three as a whole.

Participants

The sample was formed by 510 undergraduate students: 338 (66.3%) female and 172 (33.7%) male students enrolled in public and private higher schools (polytechnic institutes) and universities, taking blended online courses offered through Moodle platform during one semester of the 2010/2011 school year. This study involved Portuguese Health, Education and Psychology students. The group included 150 (29.4%) Psychology students, 182 (35.7%) Health students and 178 (34.9%) Education students. 150 (29.4%) of those students attended public universities, 162 (31.8%) private universities and 198 (38.8%) private higher schools of polytechnic institutes. Their age varies between 17 and 60 years, but mostly is between 17 and 34 years old (59.8% of the respondents are in the 17–24 age group, and 24.8% in the 25–34 age group).

Instrument

The instrument used to study the learning community in all three teaching environments was the Community of Inquiry Survey of Garrison et al., properly translated and adapted. Like the original, the survey instrument contains a random sequence of 34 items of the ten categories of factors that combine the three elements required in any desirable learning context, as they are distributed in the coding template (Table 1, cf. Garrison & Anderson, 2003). Students were asked to indicate their degree of agreement with each item (from Strongly Disagree to Strongly Agree) on a five-point Likert scale.

The 34-item instrument was implemented in three institutions in the school year of 2010–2011, with singularities (e.g., public vs. private school institution) and common features such as the lecturing of identical courses. The sample criterion was to recruit students of online tutoring teachers on the Moodle platform.

Resulting communities

What the CoI survey reveals about the existing communities of inquiry

Each student answered the survey questionnaire at the end of the course. During the course, each teacher created his/her own dynamics, fostering knowledge and pedagogical relationships through web mediation, particularly through the creation of virtual classrooms in the online environment. The aim of the dynamics was to favor work attitudes and collaborative learning. Group activities were set in place to enhance this collaborative work, with classrooms assigned to each group so
that members could communicate among each other and with the other groups. The idea was to have students avoid conceptual isolation attitudes and adopt reflexive and critical attitudes, sharing discussions, debates, systematic arguments and counter-arguments, thereby encouraging “one for all” attitudes rather than “every man for himself.”

Ordinal responses were scored using a 1–5 point-scale (from Strongly Disagree to Strongly Agree). After statistic data was processed, we saw that mean responses for all the 34 items ranged from 3.74 to 4.24, with a global median of 3.98 and a variance of 0.016. Standard deviation ranged from 0.66 to 0.89.

The Shapiro-Wilk test of normality showed that none of the analyzed variables presented a normal distribution along the 34 items, all of them showing a negative skewness. Looking at the descriptive statistics, we can situate the central measures around point 4, which reveals that, in general, students agreed that they belong to a community of inquiry in all the indicators considered.

The non-parametric Kruskall-Wallis test was used to understand if the three groups, taking into consideration their different fields of study, differed about the way they perceived themselves in the process and learning environment. Through a “variance” analysis by ranks, we found the aggregate degree to which the groups differ. The Psychology students’ group was the highest, ranking only in 5 items that have in common a social dimension of learning in the community (e.g., “I was able to form distinct impressions of some course participants,” “I used a variety of information sources to explore problems posed in this course,” “I felt comfortable interacting with other course participants,” “I felt that my point of view was acknowledged by other course participants,” “The instructor encouraged course participants to explore new concepts in this course”).

The group formed by health students highlighted their sense of participation in the inquiry community in other 5 items. All of them dealt with instruction supported by communication: (“I felt comfortable conversing through the online medium,” “Brainstorming and finding relevant information helped me solve content-related questions,” “The instructor clearly communicated important course topics,” “... clearly communicated important course goals,” “... provided feedback in a timely fashion”).

Table 1: Community of Inquiry Coding Template

<table>
<thead>
<tr>
<th>Elements</th>
<th>CATEGORIES</th>
<th>INDICATORS (examples)</th>
</tr>
</thead>
<tbody>
<tr>
<td>COGNITIVE PRESENCE</td>
<td>Triggering Event</td>
<td>Sense of puzzlement</td>
</tr>
<tr>
<td></td>
<td>Exploration</td>
<td>Information Exchange</td>
</tr>
<tr>
<td></td>
<td>Integration</td>
<td>Connecting ideas</td>
</tr>
<tr>
<td></td>
<td>Resolution</td>
<td>Apply new ideas</td>
</tr>
<tr>
<td>SOCIAL PRESENCE</td>
<td>Affective Expression</td>
<td>Emotions</td>
</tr>
<tr>
<td></td>
<td>Open Communication</td>
<td>Risk-free expression</td>
</tr>
<tr>
<td></td>
<td>Group Cohesion</td>
<td>Encouraging collaboration</td>
</tr>
<tr>
<td>TEACHING PRESENCE</td>
<td>Design &amp; Organization</td>
<td>Defining/initiating discussion topics</td>
</tr>
<tr>
<td></td>
<td>Facilitation</td>
<td>Sharing personal meaning</td>
</tr>
<tr>
<td></td>
<td>Direct Instruction</td>
<td>Focusing discussion</td>
</tr>
</tbody>
</table>

Open Praxis, vol. 5 issue 2, April–June 2013, pp. 165–178
In all the other items, the group of education students scored the highest, differing significantly in measures assembling most of the items. Since they are studying to become teachers, we may speculate that perhaps they are more aware of the importance of a learning community. At the same time, they are learning to be teachers following a model (White & Frederiksen, 1998) to implement and guide the teaching procedures with an online component.

We also used non-parametric tests to study how variables of the theoretical model of learning communities intended for the online medium behave in terms of cognitive, teaching and social presences, and their frequency. We hoped to infer the probability of a particular event taking place again. In that sense, online teaching allows the students to better learn, equate and discuss subject matters in order to build their academic pathway.

After checking that all the 34 items were highly and significantly correlated, conditions were in place to produce a model so that the various items share common factors.

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy test with KMO = 0.968 indicates that the variables are apt to enter the model. Moreover, Bartlett’s sphericity tests the hypothesis that the correlation matrix is not the identity matrix ($\chi^2 = 10758.380, df 561, p < 0.001$).

**Factor analysis and internal consistency**

As a whole, these tests provide a minimum standard that should be addressed before carrying out a principal components analysis (or a factor analysis). Principal components analysis is a method of data reduction, aiming to reduce the 34 measures to a few principal components. The purpose of the exploratory factor analysis was to assess the underlying structure of the CoI instrument used to measure the three elements after an online learning experience.

There were four factors with Eigen values greater than one. The exploration of the underlying structure of the variables that rotate the four factor solutions obtained revealed the interpretability of a simple structure, evidenced by the intertwining of the factors. Therefore, looking for the best correspondence to the theoretical model, we chose a three-factor oblimin solution. We expect it to be the best solution since the three factors of the community of inquiry are seen to be overlapping. Neither the cognitive nor the social or the teaching elements could exist without the others in an accurate experience of learning, even if it is partial online learning. So, taking into account the assumptions of the theoretical model and previous exploratory work, we used principal component analysis with oblimin rotation to confirm the three elements. We expect they will be distinct yet overlapping. The analysis of the scree plot (Figure 1) supports the three factor construct predicted by CoI’s theoretical basis and previous exploratory research. Specifically, the marked decrease in magnitude of the factors did not support a framework by a larger than anticipated number of factors.

The three components extracted accounted for 55.6% of the total variance.

Table 2 illustrates the 34 CoI items factor loadings, with the three factors highlighted for interpretability.

Hence, we can see that the relevance of principal components analysis is to redistribute the variance in the correlation matrix (using the method of Eigen value decomposition) in order to redistribute the variance to the first components extracted.

These results reflect the Pattern Matrix generated by the previously described principal component analysis. In support of this analysis, loadings for the Structure Matrix differed slightly, however both output matrices support the 3-factor model.

There are 18 items loading most heavily on Factor 1, 9 items loading most heavily on Factor 2, which is consistent with the Teacher Presence and, finally, 4 items loading most heavily on Factor 3.
The interpretability of these factors in line with the framework and design of the instrument, as to how student perceive the cognitive presence concerning the construction of meaning and understanding subject matters, encompasses the ability of participants to come together for a common purpose. Additionally, the asynchronous virtual community in which students interact may demand a significant teaching presence to manage and monitor the cognitive and social dynamic, and to create a purposeful community of inquiry. This requires recognizing the unique features to achieve educational experiences through the three overlapping areas as the extraction procedures show, producing 8 iterations.

Reliability of the factors (Cronbach’s alpha) was high and acceptable, yielding internal consistencies equal to 0.93 for Teaching Presence, 0.91 for Cognitive Presence, and 0.89 for Social Presence (see Table 3).

In addition to the fact that Cronbach’s alpha measures high internal consistency for each presence of a set of items, enforcing substantive arguments that the respective items measure the underlying (or latent) construct, we have checked the unidimensionality for each Presence assumed under the educational purpose of the courses through exploratory factor analysis. We verified that for each Presence only one component was extracted.

For the Cognitive Presence factor, loadings in the component matrix ranged from 0.632 to 0.769 and the Eigen value for the first factor is larger than the Eigen value for the next factor (6.1 vs. 0.91). Additionally, the first factor accounts for 51.3% of the total variance. This suggests that the scale items are unidimensional.

For the Teaching Presence factor, loadings in the component matrix ranged from 0.677 to 0.796. The initial Eigen value for the first factor is 7.1 versus 0.91, accounting for 55.2% of the total variance.

For the Social Presence, 53.4% of the total variance was explained by the first component with an Eigen value of 4.8, also greater than the subsequent one, with an initial Eigen value of 0.8. So, Teaching and Social Presences are also unidimensionally scaled.

Since the reliable scale was made up of items measuring autonomous Presences, the next step was to observe the scores in each presence (responsive to the framework) and to compare the students by group, that is, how they assumed the cognitive, social and teaching presence when learning from a web platform resource.

Figure 1: Screen plot principal component analysis of CoI survey
Comparing communities of inquiry of Portuguese higher education students: One for all or one for each?

Table 2: Factor loadings in the pattern matrix

<table>
<thead>
<tr>
<th>COMPONENTS</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q31_Social P_Open Communication</td>
<td>.823</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q19_Social P_Group Coesion</td>
<td>.797</td>
<td>.275</td>
<td>.106</td>
</tr>
<tr>
<td>Q25_Social P_Affective Expression</td>
<td>.785</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q23_Social P_Open Communication</td>
<td>.753</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q26_Social P_Open Communication</td>
<td>.727</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q32_Cognitive P_Resolution</td>
<td>.673</td>
<td>.156</td>
<td></td>
</tr>
<tr>
<td>Q21_Cognitive P_Exploration</td>
<td>.642</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q28_Cognitive P_Triggering Event</td>
<td>.628</td>
<td></td>
<td>.119</td>
</tr>
<tr>
<td>Q34_Social P_Group Coesion</td>
<td>.611</td>
<td>-.139</td>
<td>.117</td>
</tr>
<tr>
<td>Q30_Cognitive P_Resolution</td>
<td>.610</td>
<td>-.120</td>
<td></td>
</tr>
<tr>
<td>Q27_Social P_Affective Expression</td>
<td>.576</td>
<td>-.183</td>
<td></td>
</tr>
<tr>
<td>Q18_Cognitive P_Integration</td>
<td>.558</td>
<td>.152</td>
<td></td>
</tr>
<tr>
<td>Q13_Cognitive P_Exploration</td>
<td>.511</td>
<td>.230</td>
<td></td>
</tr>
<tr>
<td>Q17_Cognitive P_Exploration</td>
<td>.508</td>
<td>.222</td>
<td></td>
</tr>
<tr>
<td>Q20_Teacher P_Facilitation</td>
<td>.498</td>
<td>-.224</td>
<td></td>
</tr>
<tr>
<td>Q16_Cognitive P_Integration</td>
<td>.476</td>
<td>-.131</td>
<td>.178</td>
</tr>
<tr>
<td>Q29_Teacher P_Direct Instruction</td>
<td>.444</td>
<td>-.469</td>
<td>-.117</td>
</tr>
<tr>
<td>Q12_Cognitive P_Integration</td>
<td>.436</td>
<td>.369</td>
<td></td>
</tr>
<tr>
<td>Q22_Teacher P_Facilitation</td>
<td>.431</td>
<td>-.439</td>
<td></td>
</tr>
<tr>
<td>Q11_Social P_Group cohesion</td>
<td>.429</td>
<td>.286</td>
<td></td>
</tr>
<tr>
<td>Q6_Social P_Affect Expression</td>
<td>.357</td>
<td>.340</td>
<td></td>
</tr>
<tr>
<td>Q8_Teacher P_Direct Instruction</td>
<td></td>
<td>-.857</td>
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</tr>
<tr>
<td>Q7_Teacher P_Design &amp; Organization</td>
<td></td>
<td>.827</td>
<td>.150</td>
</tr>
<tr>
<td>Q5_Teacher P_Design &amp; Organization</td>
<td>-.219</td>
<td>-.805</td>
<td>.247</td>
</tr>
<tr>
<td>Q24_Teacher P_Design &amp; Organization</td>
<td>.267</td>
<td>-.697</td>
<td>-.135</td>
</tr>
<tr>
<td>Q15_Teacher P_Design &amp; Organization</td>
<td></td>
<td>-.667</td>
<td>.120</td>
</tr>
<tr>
<td>Q9_Teacher P_Facilitation</td>
<td>.148</td>
<td>-.648</td>
<td></td>
</tr>
<tr>
<td>Q10_Teacher P_Direct Instruction</td>
<td>.225</td>
<td>-.568</td>
<td></td>
</tr>
<tr>
<td>Q33_Teacher P_Facilitation</td>
<td>.357</td>
<td>-.553</td>
<td></td>
</tr>
<tr>
<td>Q14_Teacher P_Facilitation</td>
<td>.220</td>
<td>-.417</td>
<td>.202</td>
</tr>
<tr>
<td>Q3_Cognitive P_Triggering Event</td>
<td>.102</td>
<td>.728</td>
<td></td>
</tr>
<tr>
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<tr>
<td>Q2_Teacher P_Facilitation</td>
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Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.
a. Rotation converged in 8 iterations.
Descriptive and differential statistic

Considering the total sample of 510 students, Cognitive Presence items yielded a mean score of 3.92 (s.d. = 0.52), and ranged from 2 to 5 points in the agreement scale. Teaching Presence items yielded a mean score of 4.11 (s.d. = 0.56), with a minimum score of 2 and a maximum score of 5. Social Presence items collectively yielded a mean score of 3.86 (s.d. = 0.58), ranging from 1 to 5 points.

On average, all the groups of students score Presences near point 4 of the scale, as shown in table 4. This suggests that all the three Presences, both individually and jointly, reveal that students group themselves in communities, in order to perceive themselves as being cognitive and socially present in the learning process.

However, there were differences in the scores obtained that suggest the use of Kruskal–Wallis one-way analysis of variance by ranks. Using this non-parametric method, we tested whether samples of students from different courses and different Higher Education institutions originate from the same distribution. The factual null hypothesis is that the populations from which the samples originate have the same median.

Test statistics K-M taking as grouping variable the institution presents $\chi^2 = 7.886$ (p < 0.05) in respect to the global CoI. Taking into account the respective mean ranks, we can read this data as indicating that the public university is a less consistent community of inquiry. Looking for differences among the Presences, we found that they only differ at the Teaching Presence level according to the origin of institutions ($\chi^2 = 10.898$, p < 0.01). This result is confirmed after comparing Public vs Private polytechnic institutions using the Mann-Whitney test.

Using the course as the grouping variable in the K-M test, we observed that Psychology students were the lowest ranked ones. They revealed significant differences from the students of the other courses in the global CoI ($\chi^2 = 9.22$, p = 0.01), in the Teaching Presence ($\chi^2 = 11.176$, p < 0.01), in the Cognitive Presence ($\chi^2 = 6.898$, p < 0.05), but did not differ from the others in the Social Presence.

Oddly, when we compared students by gender through the Mann-Whitney U test, only in Teaching Presence do the girls exceed their male colleges ($U = 25502.500$, p < 0.05), similarly to the Cognitive and Social Presences.

Conclusion

Considering the axiomatic paradigm of education as a relationship, the proximity between teacher and students and among students, jeopardized by the loss of the status quo of each of the participants in the classroom open to everyone, seems to be recovered by the online learning process. In fact, the results obtained in this study show the relevance of the cognitive presence, the teacher’s
presence and the social presence, and their invaluable potential to mobilize students around the programme core of the instructional proposal in such a modality.

Indeed, regardless of the course and type of institution, we have found that either group is constituted as a community in all indicators. However, although they all perceive a strong social presence when the learning process is guided by web mediation, the study showed that he groups under analysis differ in how they view the cognitive effects and the presence of teaching. In particular, we found that polytechnic students attending health and education courses, in the current context, are positively different when compared to university students attending the psychology courses, which emerge as a less robust online community.

Since we wanted to understand why they differed, we monitored some virtual classrooms using the SNAPP software¹ and the Netdraw² to analyze the data, we concluded that the differences could be related to how teachers assumed different roles in online discussions. Whereas in the virtual classrooms of polytechnic students the discussions were teacher-centered, in the university student group the discussions were shared by all network members, and the teacher assumed a more peripheral stance. This enabled university students to create small interaction networks between its

<table>
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<th>Health (Private Polytechnic) N=182</th>
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members and to be more autonomous. That is, it appears that the teacher in this group assumed a mediating role, encouraging students to look for information, helping them to reflect on the processes needed to grasp formal concepts. More than imparting knowledge, this teacher sought to guide the learning process by helping students to develop their ability to learn single handedly. While bearing in mind these principles, it seems also the teachers of other groups assumed a more interventive attitude in virtual classroom discussions, controlling the process through dialogue and systematic mediation, which fostered a positive human interaction between the teacher and the learners, not only in terms of cognition but also in terms of emotions.

It is also interesting to note that the results of girls were higher than those of boys in all presences considered, and that their sense of community is significantly superior in the teacher’s presence. In order to understand these results, we also monitored some virtual classrooms with the SNAPP software and found that the girls participated more effectively in the discussions, which shows the decisive role they had in the consolidation of social-communicative and social-educational relations that were established in these communities. In this respect, we believe that the variables of social-psychological circumstances and the emotional aspects, related to their motivation, satisfaction, imagination and creativity, may explain these results.

We can, therefore, conclude that the strategies and methods adopted in the different schools, favoring work attitudes and collaborative learning, in small or large groups, clearly helped develop shared discussion attitudes, arguments and systematic counter-arguments, encouraging attitudes more akin to “one for all” and very distant from the “every man for himself” attitude. So we believe that the answer to the question heading this paper is clear and unequivocal. The expression “one for all” means the strong cohesion established between the different groups of highly participative students, in virtual classrooms.

Based on this data, we can conclude that it is increasingly important to structure balanced relationships between social, cognitive and teaching presences in order to provide significant educational experiences based on a model of collaborative work.

Underlying this work model is a reflexive dialogue that addresses specific items on the personal interests of interacting individuals, as the result of the collective inquiry promoted by the community. In this context, if we accept that virtual environments are innovative tools for creating learning communities, and that psychological tools profoundly influence our view of the world, then it is crucial to recognize the need for a new perspective on the creation of learning contexts and to recognize that the process needs to be supported by collaborative and learning pedagogical models, in that they allow us to link different learning styles (Moreira, 2012).

So, in this sense, each community of inquiry of Portuguese higher education students must be structured focusing specifically on what must be learned and the learning outcomes. Moreover, teachers as tutors must explain how students will learn to learn, directing the instruction to heuristic procedures, including self-assessment, so that students are aware of their sustained and systematic cognitive construction. The opportunities of online learning are of paramount importance to allow for convergence and provide benefits for all, so that the supply of higher education can be an ongoing construction of all for all, safe and with quality.

We need to emphasize that given their limitations these results should be interpreted with caution. Like any other work, ours also has limitations, some of which we recognize immediately, for e.g., external validity, since the results cannot be understood as final and overall applicable. Indeed, note that the empirical component of research is quantitative, resulting from the quasi-experimental plan, because we our study consists of about 500 public and private, polytechnic and university higher education, already placed in classrooms, but not randomly, drawn from what Moore (1983) called experimentally accessible population.
Our intention is to do justice to the theme, due to its relevance and the impact it deserves in practical terms. In our opinion, this work cannot be seen as completed, but it should rather assume an instrumental nature, useful for those who want to make use of it as a consultation or critique instrument, or even as a starting point for other pragmatically valid work, in order to enrich the range of contributions to understand the issues on the agenda.

Notes
2 Netdraw (software), Retrieved from http://www.analytictech.com

References


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Networked curricula: Fostering transnational partnerships in open and distance learning

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Abstract
Transnational Networked Curricula (TNC) provides many benefits to the institutions that offer them as well as to the different stakeholders involved, not only the students but also the academics, the institutions as a whole, and the wider society. Supporting Higher Education Institutions in enhancing and implementing international networked practices in virtual campus building is the main aim of the NetCU project, which has been developed by the EADTU, in partnership with 14 member organizations, from 2009 to 2012. The project outcomes intend to facilitate the future set-up of networked curricula in Higher Education institutions and potentially lead to more transnational partnerships in Open and Distance Education (ODE) and blended learning, showing challenges, obstacles and ways to overcome them. This paper presents the main products developed in the project, assesses its completeness and usage, and discusses on the challenges of curricula networking starting from the ideas and opinions shared in different stakeholders workshops organized under the NetCU project.

Keywords: Challenges of Curricula Networking; Higher Education Institutions Transnational Partnership; International Mobility; Open and Distance Learning; Transnational Networked Curricula

Introduction
Some of the challenges of Higher Education Institutions (HEIs) in a global society are related to the encouragement of networked curricula, mobility recognition and strategies for integration of Information and Communication Technologies (ICT) as a way to achieve the requirements of the European Higher Education Area (EHEA), facing the diverse needs of today’s student population and lifelong learners (EUA, 2006). Transnational networked curricula, in particular, have a number of positive effects in this sense, providing students with the best knowledge and skills needed in today’s labour market. Through collaboration HEIs can offer their students a broader range of content, better quality and an improved international learning experience.

Transnational Education refers to education provision that is available in more than one country and includes a wide variety of delivery modes (Baskerville, MacLeod & Saunders, 2011). It includes a variety of curriculum plan design in which different Higher Education Institutions are involved ranged on a continuum from less to more integration and structure plan and strategy. Exchange curricula include flexible programs organized in a short term to tailor the needs or interest of individual students at the host university. However academic recognition of mobility period abroad is still problematic. Networked curricula include collaboration among universities based on student groups’ mobility having the option for dual certificates in case of substantial stay at various universities. Integrated curricula include –in most cases- a common part of the curriculum and complementary options with a mobility (physical and virtual) plan for all students with a Joint Certificate at the end of their study (Henderikx & Ubachs, 2012, p. 6).
The growing importance of ICT based teaching and learning and the steady developments in web 2.0 technologies, bear great opportunities for the realization of international networked curricula fitting the lifelong learners needs. As pointed by Dirckinck-Holmfeld, Hodgson and McConnell (2012) the web 2.0 supports networked learning pedagogical approach, focusing on the potential of ICT to support collaboration. Johnson (2001) emphasizes the importance of adequate scaffolding inside communities of practice, especially in the cases of online communication techniques and technical support. However, most networked curricula so far are delivered in a traditional face-to-face setting and do therefore not cover the needs of a growing number of students. But lifelong learners and non-mobile students should also benefit from such offers.

Since the 2001 Prague Higher Education Summit which included the demand to “step up the development of modules, courses and curricula offered in partnership by institutions”, an evolving landscape of transnational partnerships in Higher Education can be witnessed. While this is certainly also valid for open and distance education (ODE) and blended learning, here the activities seem to be missing an overall analysis as well as models and guidelines for facilitating implementation. A short survey among the members of the European Association of Distance Education Universities (EADTU) showed that many of them are already collaborating with international partners and offer networked curricula schemes via online or blended modes. The majority of the universities want to get further involved in it and sees international networked curricula as a major step towards their future success. A need for more action-research and sharing experiences, for transferable models and for clear guidance in how to initiate and implement networked curricula in ODE and blended learning, have been expressed.

Trying to fill this gap, EADTU, in partnership with 14 member organizations representing 20 European showcases, ran the NetCU project during two years (2010–2012). This project has combined a set of activities and approaches: a) already existing networked curricula in the field were collected and analyzed; b) from this analysis, models have been derived and c) guidelines to create and implement different forms of networked curricula in ODE and blended learning have been given. In addition d) experiences with advanced ICT solutions and emerging practices, e.g. social software, have been shared, transferred, tested and evaluated.

**Value and benefits of curricula networking**

As Heusser and Dittrich (2010) point out, joint programmes are at the core of the Bologna reform as they stimulate trans-border cooperation as well as the mobility of students and staff in Europe, and are therefore on the top of the European Higher Education agenda. But this is not a European issue alone: all over the world institutions are aiming at collaboration and internationalization, and the European Commission funds projects in which there is transnational cooperation between European and non-European countries. In the needs assessment carried out in the Inter-Alfa project (Mata & Ávila, 2008; Malik et al., 2010), one of the main reasons to be involved in a joint programme, pointed out by one of the Latin-American project partners was “to establish agreements with international higher education institutions in order to deliver high quality graduate programs and allow an exchange of knowledge and experience that will ensure high level specialized training.”

As part of a Mexican institution’s internationalization process, the “establishment of networks and collaboration with institutions in other countries, access to some of their courses and programs, mobility of our professors and students to these institutions, and reciprocal interinstitutional accreditation” were considered primary goals aimed at the country’s participation in the global increasingly competitive arena.
As stated in the Bologna Process website (2007–2010), good joint degree programmes offer a series of interrelated benefits for students, staff and institutions alike:

- Institutions are able to combine their strengths in a collective endeavour in which one unified programme becomes more valuable than the sum of its parts.
- Joint programmes offer the potential to develop more internationalised, multi-dimensional curricula, in addition to opportunities for developing and practising language and cultural skills.
- Students experience the intellectual stimulation of viewing their chosen subject through more windows, developing new learning methods and ways of thinking.
- University staff can be exposed to unfamiliar approaches to their subject through more sustained contact with partner colleagues.
- They may also explore how different methods of teaching and learning in their areas of specialisation can complement and enrich each other.

In the same fashion, soundly implemented joint-degrees provide a clear added-value to the EHEA (and we can say that to other continents’ higher education areas as well), due to the following characteristics (Bologna Process website, 2007–2010):

- Mobility is integral to the course content and design rather than an ‘add on’. Students are thus required and assisted to study in a partner institution in a different country.
- The preparation of integrated joint degree study programmes encourages more transparent academic recognition procedures. The correct use of ECTS and the Diploma Supplement (DS) can greatly help.
- Quality enhancement of programmes is encouraged through teaching staff devising curricula that are open to scrutiny from partner colleagues abroad.
- Students who experience high quality joint programmes have a greater chance of becoming internationally employable graduates.
- Teaching staff in joint programmes have opportunities for professional development outside their home country. Within joint degree networks, they can thus establish links that build a firm foundation for further international cooperation including transnational research.
- Joint degree programmes, particularly at Master and doctorate levels, are of great potential interest to students from outside Europe, and opportunities for such students have been extended by the Erasmus Mundus programme. Institutions can thus use these programmes to position themselves strategically in an international market.

Other benefits or aspects which add value to networked curricula:

- Attractiveness of achieving degrees which are easily recognized in more than one country
- Educational value of studying in another institution and another country within a clear pre-planned agreement on recognition and integration in the curriculum
- Increased promotional prospects for a student’s career, by earning a joint or double degree, or more than one, and the social competences developed, as well as a broader worldview are usually appreciated by employers.
- Acquisition of new knowledge, enhanced by a richer curriculum derived from the cooperation of different academics and institutions.
- The experiences lived with students from different origins.

International students are a key element in the global society development. As stated by Dunkel (2009) the tension between convergence and diversity within a higher education system is a key
factor to face balancing the diversity (horizontal and vertical) and variety (between countries and cultures). Bartram (2008) explores the association between student characteristics (age, ethnicity, nationality and aspects of personality) and perceived support requirements, taking into account aspects as ideological and educational backgrounds. Culver et al. (2012) examine strengths and weakness of a sample of dual and joint degree programs, finding some positive results in personal dimensions among students as self-reliance, rather than professional ones.

The NetCu project

EADTU’s NetCu project has taken up the societal and institutional needs as described above and developed a work programme that supports HEIs in enhancing and implementing international networked practices in virtual campus building. The project outcomes intend to facilitate the future set-up of networked curricula by HE institutions and potentially lead to more transnational partnerships in ODE and blended learning. Thus NetCu lead to a successful internationalization of universities and enhanced virtual campuses. Universities receive strategic and practical support for improving the quality of their curricula and for strengthening their international portfolio. Students find access to more and better learning opportunities and have the opportunity to enhance their ICT and international skills. On the European level the transparency and convergence grow and a European identity of study programmes in ODE and blended learning emerges.

The general aim of the NetCu project is to develop models, guidelines and strategies for transnational networked curricula that supply a broader range of content and learning activities, using ICT for innovative strategies in an international context.

Methodology

The research methodology applied is the study of cases based on a qualitative approach combining a set of phases: a) Identification and analysis of networked curricula examples; b) Collection of key information on them using a questionnaire; c) Analysis of the key elements of the TNC model through the development of several internal and external workshops; d) Analysis of the most useful ICT tools among partners; and e) Evaluation of the NetCu products developed.

As a first step a comprehensive mapping, description and analysis of the currently existing networked curricula was made. A set of key areas were analysed: educational model, ways of sharing of content, role of mobility, issues of assessment, recognition and quality assurance, the role and usage of ICT in the curriculum, national, legal and institutional frameworks defined, etc. Information on these and further questions helped to deliver comprehensive data for deriving systematic models of networked curricula in ODE and blended learning. With these models specific cases were transferred into common features of networked curricula in ODE and blended learning and translated into viable guidelines for developing and implementing transnational networked curricula. To strengthen the important technological dimension of networked curricula in ODE and blended learning innovative ICT solutions were shared, analysed and plugged into one of the case studies for testing and enhancing.

During the second year of the project lifetime -2012- two external stakeholder meetings and a series of 12 internal local seminars were held with the aim of testing those Guidelines in practice and receive feedback for further fine-tuning and improve the final outcomes, showed at the EADTU annual conference 2012 under the EU-Presidency of Cyprus.

In the last stage of the project, a number of internal stakeholders’ workshops were delivered with the joint participation of academics, students, managers and administrative staff from different HEIs.
involved in the project. These workshops intended to test and assess the completeness, potential use, practical usage of the project’s products as well as to discuss on challenges and obstacles related to the implementation of TNC, and ways to overcome them. A brief summary of the ideas shared in these workshops will be presented below.

**The NetCU products**

The project outcomes and results stimulate and facilitate the set-up of new networked curricula and improve existing ones and thus trigger the positive effects as described in the previous part of this document. One of the specific objectives of the NetCU project was to help universities to promote transnational networked curricula using ICT, facing challenges as recognition and strategies for mobility. In order to fulfill this aim, a set of products has been developed:

- The **NetCu Handbook** (Ubachs, 2012) offers easy-to-use scenario’s and gives examples of best practices for all professionals who want to engage in setting up a networked curriculum. It covers key aspects as Goals, Partnerships, Students and Students Characteristics, Models and Formats, Legal Framework and Quality Assurance in Higher Education in Europe.

- The **NetCu Showcases Compendium** describes and analyzes running European examples of transnational networked curricula. The collection of success factors from existing models intend to help new initiatives to become successful as well.

- The **NetCu ICT Toolbox** provides with full information on innovative and useful tools under a broad range of categories: *Integrated systems* (Content Management Systems, Virtual Learning Environments, Social Networking Systems, 3D Virtual worlds); *Communication* (Mailing list, Forum, Chat/IM, Audio-Video conferencing, Web conferencing); *Collaboration* (Collaborative editing, Collaborative aggregation, Calendar and agenda management); *Live presentation* (Video streaming, Slides presentation, Screen sharing, Lecture webcasting); *Publishing and sharing* (Audio publishing/podcasting, Video publishing, Image publishing, Slides publishing, Documents publishing, File sharing, Lecture recording); *Social and personal learning* (Blogging, Activity streaming, Aggregation, Social bookmarking, Connection and contacts management, Media sharing); and finally, *Research and Evaluation* (Survey, Reference management, Self-evaluation, Testing, Assignment).
Completeness and Usefulness of the NetCU Products

Research projects require counting from its initial proposal and throughout its development with the requirements of quality assurance that are presented in the Handbook as a way of inventory: How to perform the analysis? Who will be the actors involved in the evaluation? Which will be the documents to analyse? Should specific surveys be created? (Pereira, Morgado, Caeiro & Teixeira, 2012, p. 106). The feedback of workshops' participants emphasizes the clarity and appropriateness of the issues addressed in the NetCU Handbook as well as its usefulness for future consortia. It provides the reader with a highly supportive methodology and good examples. However there are some relevant issues that, from the participant's view, need to be addressed; among others, how to solve the inequity as a result of the difficult access to mobility of students from countries lacking of specific funding, as well as how to make competences' accreditation equivalent in the different institutions / countries involved.

Regarding the NetCu Compendium of Showcases (NetCU Project, 2012a), the workshops' participants highlight that it presents synthetic data that make easy to review the key achievements of each case selected in the study. It is valued as a motivating product, easy to be understand, that clearly describes how other institutions works and may inspire. It provides a good exemplification and offers ideas to start designing a new networked curricula. They suggest to add a comparative study of success, ways to overcome obstacles and tips for improvement in the cases analyzed, as well as a contact of someone who could provide more information in case the reader has questions not answered in the text. In order to promote good practices in high education environments we share the following idea: "Education for global citizenship embraces the ideas of peace, tolerance and mutual understanding, human rights education and related educational themes (...) promoting intercultural understanding, inter-faith dialogue, respect for diversity and empathy." (UNESCO, 2011, p. 23).

As pointed out by the European Commission (2011, p. 10): “Networking has become one of the central capabilities in mobile, knowledge-based societies”. On regards to the institutional responsibility in the development of networking, some universities suggest the need of some kind of specific section or back office, a proactive structure with representation of academic staff, to support the organization, development, monitoring and dissemination of curricula network. Individual efforts are crucial, but the complexities of the networking require a formal support system and strong cooperation between academics and administrative staff.

In the participant's opinion, the ICT Toolbox (NetCU Project, 2012b) provides an overview of the vast and changing field of web resources that can be applied in education, most of them open materials, and allows adaptation to different models of networked curricula. It makes shorten the decision making process about the tools. Updating of the database is a challenge.

Institutional Benefits and Responsibilities

Workshop participants agreed on the absence of a specific policy about networked curricula in their institutions, and highlight that there is still no provision for networked curricula in national legislation. Nevertheless, internationalization and cooperation are key aspects for HEIs progression, so all of them declare to have a strategic plan or a framework for future development, as well as many specific ongoing initiatives on curricula networking. They defend the need of overcome the barriers of on-site and virtual learning, and encourages the virtual mobility as a good option.

Participants outline that many advantages to the university can arise with networked curricula: internationalization (strong recommendation on the level of EU guidelines), marketing, sustainability and mobility (of students). The international cooperation between different academic institutions.
is essential to improve the quality of the didactic, and also to give the students a more qualifying preparation and better opportunities in the labour market. In addition, networked curricula contribute to make it possible for more people to access higher education, open the institutional perspectives and provides with more and better opportunities to researchers and students. Finally, it enables to advance in the internationalization rankings supported by EU and other international organizations.

- **Challenges and Obstacles, and Ways to Overcome them**

Some of the main obstacles identified by the workshops’ participants relate to issues of language, certification, students workload, school calendar (in particular for partnerships involving non-European countries), wide variation in fees at the international level, compatibility of assessment practices. More specifically, compatibility between models, practices and evaluation systems is an issue that rise challenges for the promoters of networked curricula. Management and administrative procedures among potential partners are frequently incompatible. Sometimes there are different registration requirements for students in terms of, for example, entrance Degree. On the other hand, sometimes specific virtual spaces are not designed to friendly add other languages: Curricula flexibility faces strictness of technical applications. It was highlighted that it is usually easier to overcome these obstacles at the level of postgraduate than in graduate courses.

Moreover, networked curricula provoke a work overload and a high level of effort for academics and staff in general. Internally, a possible way to overcome these difficulties would be to work collaboratively at the different involved levels: institutional, administrative, technological and academic. Another suggestion to get over this obstacle points to networking smaller parts of curricula.

Another challenge relates to the difficulty to find partners with convergent interest and wishing to cooperate for the creation of joint programmes. Attendance to international conferences and meetings use to be a good method to find partners for scientific cooperation, but it seems not to be so fruitful for didactic cooperation, probably because a higher trustfulness level is required. To overcome this, they suggest to extend and strengthen the existing national and international relationships among HEIs and to promote the creation of new ones. The development of a space or environment where one specific institution can find requests and offers of new didactic collaborations in specific sectors may be an instrument to encourage the creation of new networked curricula. They also suggest that, due to its novelty and complexity, forums and debates about the advantages and difficulties in virtual mobility should be encouraged, and the European Commission should disseminate good practices to renew and extend the good results given.

**Conclusion**

EADTU’s NetCU project has taken up the societal and institutional needs as described above and developed a work programme that supports HEIs in enhancing and implementing international networked practices in virtual campus building. The project outcomes intend to facilitate the future set-up of networked curricula by HE institutions and potentially lead to more transnational partnerships in ODE and blended learning. Thus NetCU lead to a successful internationalization of universities and enhanced virtual campuses. Universities receive strategic and practical support for improving the quality of their curricula and for strengthening their international portfolio. Students find access to more and better learning opportunities and will enhance their ICT and international skills. On the European level the transparency and convergence grow and a European identity of study programmes in ODE and blended learning emerges.
With the NetCU project, EADTU has taken the lead in providing an analysis of international networked curricula in ODE, from which models and comprehensive guidelines have been developed. All the NetCu products are available as open source material under www.networkedcurricula.eu. Thus, HEIs can find useful orientation on starting a networking project or programme, as well as methodological and technical support in designing and implementing a networked curricula.

Transnational Networked curricula can be quite complex and challenging to implement, nevertheless, they provide many benefits to the institutions that offer them and to the different stakeholders involved, not only the students but also to the academics and the institutions as a whole, as well to the wider society, due to the outcomes derived from the strengthening of collaborative teaching and research.

At the same time, the NetCu project enhances and supports the development of virtual mobility as a solution to the challenge of meeting the needs of all students, including non-mobile students and lifelong learners. Networked curricula should take into account that all students should benefit from international collaboration. In this sense, limits on physical mobility must not be barriers to offering our students an international experience. Technology now makes possible a mix of learning opportunities, such as virtual seminars, projects, internships and so on, from which we can begin to expand the mobility of credit and qualifications.

Acknowledgement


Notes


References


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Review of A-VIEW 3.5 software

A-VIEW (Amrita Virtual Interactive E-learning World) Classroom 3.5
URL: http://aview.in
Developed by Amrita Vishwa Vidyapeetham (India) in 2009

Reviewed by: Mandar Lakshmikant Bhanushe
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Online education, though not a new phenomenon, has seen many new developments in past few years. Various online learning platforms are available which facilitate the teaching-learning process. They have the power to break the geographical walls between learners and educators and also give access to the best educators across globe. In this paper we are reviewing the A-VIEW virtual classroom software from the point of view of a presenter as well as a learner.

A-VIEW (Amrita Virtual Interactive e-Learning World) is a multi-modal, multimedia e-learning virtual classroom platform that provides an immersive e-learning experience that is almost as good as a real classroom experience. It has been developed by Amrita e-Learning Research Lab which is a part of Amrita Vishwa Vidyapeetham situated in the State of Kerala in India. Educators across the world can use A-VIEW to deliver their content online using various features of A-VIEW. It can be used by anyone, from anywhere and at anytime.

A-VIEW is part of Talk to a Teacher program coordinated by Indian Institute of Technology-Bombay (IIT-B) and funded by the Ministry of Human Resource Development (MHRD) under the Indian Government’s National Mission for Education using Information and Communication Technology (NME-ICT). A-VIEW is deployed at several IIT’s and other leading educational institutions across the nation. A-VIEW Classroom is a framework that provides a rich interactive social environment for e-Learning. It is a simple to use, user friendly video conferencing software, which provides a great opportunity to a teacher to teach in a live interactive mode to learners spread across various geographical locations around the globe. It also provides opportunity to connect several universities together and create virtual world for learners. It acts as a Knowledge Cafe where learners can discuss/chat about the lecture even after the live class.

A-VIEW is compatible with various operating systems like Windows, Mac, iOS platform, Android Phones and also with Tablets and iPads, thus enabling learning on the move.

The following are some of the features of the A-VIEW Classroom:

- Conduct-Record-Edit: Conduct of live classes with recording facility to allow learners to playback the classes after the class is over. The moderator can also edit the video of a recorded class, embed another video to the existing video.
- Multiple facilitator-learner interaction using video and chat (including individual chat) sessions.
- Multi viewer interaction.
- The learners can be divided into groups and group discussion/activity can be conducted in a live classroom.
- All file types, applications/software can be shared using the ‘Document sharing’ and ‘Application sharing' option. Document sharing has enhanced features like thumbnails for documents, annotation tools, document download option for viewers, central repository and document upload.
• Content can be displayed across multiple displays using multiple windows option while logging in, enabling a rich viewing experience.
• An interactive whiteboard with various tools like text box, pen tool, line tool, geometrical shapes, eraser and highlighter is available. The whiteboard is expandable to full width of the screen.
• A few inbuilt 2D, 3D animated objects are available. Any 2D, 3D animation/objects (f3d and dae format) can be uploaded and used by the presenter.
• Video sharing option allows the teacher to share live video from say Youtube or also play any video (mp4/ flv/f4v format) which is already uploaded in the library.
• There is a face recognition facility, using which learners can make their biometric login. This feature introduces a new level of security to the application. The user will have to first register his/her face through the application and during login the user can authenticate their login through the face recognition option.
• During the online class, learners can ask their questions using the Question interface option. The class can also vote for the questions asked which helps the teacher to prioritise which question to be answered first.
• A question bank of multiple choice questions type can be created, based on which a quiz can be created for a live class. The results of the quiz are also available after the quiz is over.
• A poll can be conducted in a live class by the teacher. This feature is used to get feedback of the participants during a live class.
• Chat option allows users to chat with the presenter/other users. The moderator has the control of disabling the chat option to all users.

It is because of its wide usefulness in the area of open and distance learning that A-VIEW received the Jury Award for the best innovation in Open and Distance Learning under Higher Education Category in World Education Summit, July 2011. The Computer World Magazine (USA) recognized Amrita E-Learning Research Lab with Computer World Honours Laureate 2012 under the Training and Education category for developing A-VIEW in June 2012. In September 2012, at the Indo-Global Educational Summit and Expo, A-VIEW was awarded for Educational Excellence in the field of Educational Technology.

A-VIEW organises weekly discussions for all its users every Thursday. Topics cover the entire spectrum of Higher Education.

By introducing A-VIEW to schools, the Amrita University hopes to enhance the quality of school education across India. For colleges, A-VIEW was successfully used to train around 14,000 teachers online simultaneously across India. The scalability of A-VIEW can be effectively used for addressing the shortage of teachers in schools. Training for 10,000 engineering college teachers from across the country was conducted leveraging the broadband network and ICT tools. This training programme was conducted through 168 remote centres located all across India. The lectures in this course were delivered from IIT Bombay by Professors of IIT Bombay and IIT Madras. More and more Universities and Colleges have started exploring the features of A-VIEW for their online courses/conferences and also as a supplementary teaching tool to the existing face-to-face classroom teaching. The University of Mumbai’s Institute of Distance and Open Learning has also started its two programs recently through A-VIEW.

One major weakness, in spite of all these positive features, is the downloading and installing part of the software. In comparison to other similar virtual classroom environments where the virtual classroom is accessed by a web link, for A-VIEW one needs to download the software. Another problem is the dependency on the A-VIEW team to actually conduct a course/class online. One
needs to inform the A-VIEW team about the course so that the servers are allocated to that course/class for that specific period and time. A-VIEW should automatically do this at their end in order to simplify the organising and conduct of an online course/class. The minimum 1 mbps bandwidth for running A-VIEW is one more weakness, especially at remote places where the internet connectivity is not yet strong.

Keeping in mind the scalability of the use of A-VIEW for primary, secondary or higher education including the usefulness in the area of Open and Distance Learning, A-VIEW stands out unique amongst its competitors in the field of Educational Technology. More and more Universities/Colleges/Schools should explore A-VIEW and give a positive feedback for its improvement to make Education reach to all and from highly qualified educators spread across the globe.