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Introduction to Open Praxis volume 7 issue 3

Inés Gil-Jaurena

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Open Praxis is a peer-reviewed open access scholarly journal focusing on research and innovation in open, distance and flexible education. It 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. In this third issue in 2015, 12 authors from Canada, Mexico, United Kingdom, Brazil, Pakistan, South Africa, Slovak Republic and the United States of America have contributed in six different papers, four of them with a research-oriented approach and two of them with an innovative practice character. The broad topic of openness is somehow addressed in most of the papers, which deal with open educational resources and other open practices.

The research papers section begins with a paper by George Veletsianos (A Case Study of Scholars’ Open and Sharing Practices), who presents an analysis of the kind of practices that faculty members develop regarding openness when there are not specific institutional policies advocating so. He studies the case of an online university and focuses on the sharing of scholarly materials online in an open format. The diverse levels of openness he has identified in the case study lead him to value the influence of individual agency in the practice of openness.

Following with openness but from an institutional perspective, Marcela Georgina Gómez-Zermeño and Lorena Yadira Alemán de la Garza (Temoa: An Open Educational Resources Portal to seek, investigate and inquire) explain Temoa, a multilingual public catalog of collections of OER. They introduce how the information is cataloged and classified in a collaborative manner. Through interviews to Temoa developers, the paper shows relevant aspects about the construction of this portal and highlights its usefulness for the selection of OER to be used in the teaching-learning process.

Moving into a different topic, Alexandra Okada, Peter Scott and Murilo Mendonça (Effective web videoconferencing for proctoring online oral exams: a case study at scale in Brazil) focus on a specific strategy to support assessment in online education. They have studied the use of FlashMeeting (FM) in a Brazilian University for oral exams. Using a mixed method approach, they have collected data provided by the system and qualitative feedback from users—both students and examiners. Based in the study, they present a set of recommendations for an effective use of web videoconferencing in online courses at scale with the purpose of dealing with the challenge of quality assurance.

Closing the research articles section, Ayesha Perveen (Critical Discourse Analysis of Moderated Discussion Board of Virtual University of Pakistan) presents a qualitative study of discursive practices in online fora. Using a model developed upon Fairclough and van Dijk’s frameworks, she analyses different dimensions in five discourses that took place in a course, with an emphasis in highlighting power relations from a critical perspective.

In the innovative practice articles section of the journal, openness is recovered as a central aspect. Brenda Justine Mallinson and Greig Emil Krull (An OER Online Course Remiking Experience) explain an experience developed in Africa, which consisted on designing and implementing a course about Facilitating Online Learning by remixing existing OER. They narrate the whole process and
decisions made, as well as the lessons learned when evaluating the experience, of special value for other academics willing to adopt, adapt, reuse and remix open educational resources.

Finally, Jan Gondol and Nicole Allen (Open Government Partnership as a Platform for Advancing Open Education Policy) reflect about the importance of national commitments for the advance of open education. They explain how the Open Government Partnership (OGP)—which comprises 65 nations—is committed with opening up government information and has initiated a move towards adopting open education in the national action plans. They present the case studies of the United States and the Slovak Republic as pioneers in this sense. They provide various valuable recommendations to other OGP countries to support open education national policies and practices.

It is our wish in Open Praxis that the topics covered in this open issue will contribute to discussion and improvement of practices in open, distance and flexible education. We want to express our special thanks from Open Praxis to the authors and reviewers who have collaborated in this issue.
A case study of scholars’ open and sharing practices

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Abstract

Although the open scholarship movement has successfully captured the attention and interest of higher education stakeholders, researchers currently lack an understanding of the degree to which open scholarship is enacted in institutions that lack institutional support for openness. I help fill this gap in the literature by presenting a descriptive case study that illustrates the variety of open and sharing practices enacted by faculty members at a North American university. Open and sharing practices enacted at this institution revolve around publishing manuscripts in open ways, participating on social media, creating and using open educational resources, and engaging with open teaching. This examination finds that certain open practices are favored over others. Results also show that even though faculty members often share scholarly materials online for free, they frequently do so without associated open licenses (i.e. without engaging in open practices). These findings suggest that individual motivators may significantly affect the practice of openness, but that environmental factors (e.g., institutional contexts) and technological elements (e.g., YouTube’s default settings) may also shape open practices in unanticipated ways.

Keywords: Openness; open practices; open scholarship; digital participation; case study

Introduction

Open practices in a variety of educational and scholarly settings have gained wide interest and attention by researchers, educators, administrators, and entrepreneurs (Iiyoshi & Kumar, 2008; Weller, 2014; Wiley & Hilton III, 2009). In recent years, many technology-enhanced initiatives have extolled the potential of open practices to improve education. As noted elsewhere, proponents of openness have argued that open practices may “broaden access to education and knowledge, reduce costs, enhance the impact and reach of scholarship and education, and foster the development of more equitable, effective, efficient, and transparent scholarly and educational processes” (Veletsianos & Kimmons, 2012a, p 166). Furthermore, it is often argued that scholarship should be openly licensed for moral reasons, so that the public and all intended users (i.e. other researchers) can benefit from the knowledge generated by researchers, knowledge which is often produced using taxpayers money (Willinsky, 2006). These arguments have led individuals, educational institutions, and governments worldwide to embrace a variety of open practices. For example, numerous universities worldwide now offer open online courses; in 2012 the state of California passed legislation supporting the creation of open textbooks (SB 1052; SB 1053); the Premiers of Alberta, British Columbia, and Saskatchewan signed a Memorandum of Understanding (2014) to facilitate creation, sharing, and use of Open Educational Resources; and in 2009 The Netherlands was one of the first countries to initiate a national policy to mainstream open educational resources (Mulder, 2013).

Even though openness is seen as a desirable and effective approach to address a variety of problems facing higher education (Weller, 2014), researchers currently lack in-depth understandings of open practices performed by individuals in particular contexts and especially in contexts that don’t advocate for openness. What might make the status quo more confusing is the fact that sharing is often seen as an open practice, even though sharing practices and open practices differ in one
significant way: open practices have to do with licensing while sharing has to do with the act of making an artifact or activity available to others. In this paper I attempt to help fill this gap in the current literature by presenting a descriptive case study of the variety of open practices employed by faculty members at an institution referred to for the purposes of this paper as Tall Mountain University (TMU). I first explain the meaning of the term “open practices” and review literature relevant to the term. Next, I provide a theoretical perspective to frame openness, describe the context in which this study took place, and outline the methods used to investigate open and sharing practices at TMU. Finally, I describe how open and sharing practices are and are not being employed by faculty members at TMU and discuss the implications of these findings.

Review of relevant literature

The term “open” is frequently used as a modifier to denote that the creation, ownership, use, modification, and sharing of various resources (e.g., a textbook, a syllabus) is governed by liberal licensing policies. Specifically, Wiley (n.d., ¶1) argues that “[t]he term “open content” describes any copyrightable work (traditionally excluding software, which is described by other terms like “open source”) that is licensed in a manner that provides users with free and perpetual permission to retain, reuse, revise, remix, and redistribute the work. These permissions are called the 5Rs. Open practices are activities that espouse such an ethos of sharing and transparency. In academic contexts, open practices take three main forms, "(1) open access and open publishing, (2) open education, including open educational resources and open teaching, and (3) networked participation" (Veletsianos & Kimmons, 2012a, p. 2), and include teaching, learning, and research activities. In instruction, they frequently (though not exclusively) include the creation, use, re-use, adaptation, and dissemination of open educational resources (Armellini & Nie, 2013; Murphy, 2013; Nikoi & Armellini, 2012; Tuomi, 2013; UNESCO, 2002).

Similar principles are evident in open research practices, most notably in open access publishing, which makes scholarly work “freely and openly available online with no unnecessary licensing, copyright, or subscription restrictions” (Yuan, MacNeill, & Kraan, 2008, p. 2). Such practices are expected to foster the transparency and visibility of ongoing research projects at all stages of development (Esposito, 2013; Hayden, 2011), including the sharing of data and research materials (Eich, 2014; Nature Publishing Group, 2013). Open practices are often accomplished or accompanied by academic activity on digital environments and online social networks, and these are often considered to be integral to networked scholarship (Veletsianos & Kimmons, 2012a, 2012b). While open practices often espouse sharing, it is possible for the sharing of scholarly materials to occur without any of the 5R permissions. For example, many of the massive open online courses offered by providers such as Coursera and edX prohibit users from retaining, reusing, revising, remixing, and redistributing content, even though they do allow unfettered enrollment.

The majority of the literature on open practices has focused on the perceived benefits of the movement, such as broadening access to higher education, enabling personalized learning, and enhancing opportunities for collaboration and networking (Nikoi & Armellini, 2012; Schreurs et al., 2014; Yuan et al., 2008). Few studies however have provided empirical results to support their claims, with the exception of the burgeoning empirical literature on open textbooks and open access publishing that shows a variety of positive outcomes (e.g., Eysenbach, 2006; Hajjem, Harnad, & Gingras, 2005; Gargouri et al., 2010; Robinson, Fischer, Wiley & Hilton III, 2014; Zawacki-Richter, Anderson, & Tuncay, 2010).

The literature has also identified potential barriers to open practices. Such barriers are both systemic and individual (Scheliga & Friesike, 2014). For instance, OLCOS (2012) notes that the
creation of OER could be inhibited by the lack of mechanisms for rewarding academics for their involvement in OER creation and dissemination. Bossu, Bull and Brown (2012) argue that a major barrier to the OER movement may be a general lack of understanding of the movement among higher education professionals. Of notable mention here is the Open Educational Resources Research Hub, whose aim is to research and gather research on the impact of OER. De los Arcos, Farrow, Perryman, Pitt & Weller (2014) reported that general knowledge of well-established OER repositories appears to be low and only about 13% of educators create and publish resources with a Creative Commons license. A recent survey by the Babson Research Group (Allen & Seaman, 2014) reveals similar findings by showing that the majority of faculty members (between two-thirds and three-quarters of those surveyed) are unaware of OER.

Further, Ehlers (2011, p. 1) describes potential barriers for individuals as “lack of institutional support; lack of technological tools for sharing and adapting resources; lack of users' skills and time; lack of quality or fitness of the resources; and personal issues such as lack of trust and time.” At an institutional level, Murphy (2013, p. 203) suggests a possible “lack of compatibility between the philosophy of OER and existing institutional cultures and priorities,” and OLCOS (2012) observes that a lack of business models may inhibit OER uptake. Like the literature on the benefits of open practices, however, much of the literature on these challenges is speculative and based on little empirical evidence, perhaps because of the relative novelty of this area.

In my review of the literature I was not able to identify any in-depth case studies examining faculty members’ open and sharing practices at any particular educational institution. A small number of studies have examined how institutional policies can support open practices. Nikoi and Armellini (2012, p. 180) for example, argued that educational institutions should “embed an open practices section into main strategy documents, such as the learning and teaching strategy, and provide expertise and resources to enable those practices to take hold.” Empirical research on the impact of institutional policies on open access (OA) is also lacking, but one recent study found that institutional mandates for OA do indeed encourage OA practices (Vincent-Lamarre, Boivin, Gargouri, Larivière & Harnad, 2014).

This study attempts to address the lack of research in this area by describing the range of open practices engaged in by faculty and staff at one institution without a stated OA policy, thereby providing a natural case study of the diffusion of open and sharing practices. As such, this research seeks to expand scholarly understanding of openness in institutional settings.

**Theoretical framework of openness**

Wiley and Hilton III (2009, ¶1) have argued that every educational institution must address “openness as a core organizational value if it desires to both remain relevant to its learners and to contribute to the positive advancement of the field of higher education.” Today, countless organizations—including journals (e.g., Nature Publishing Group, 2013), scholarly societies (e.g., Eich, 2014), funding agencies (e.g., NSERC, 2014), and government- and intergovernment-supported groups (e.g., OLCOS, 2012; OPAL, 2011, UNESCO, 2002)—have embraced open practices. These advocates often value openness for its practical benefits and present openness as an instrument for reaching such important goals as reducing costs, increasing impact, and enhancing access. Nonetheless, open practices often remain under-theorized in the literature, which I believe is a detriment to the field. Other researchers have recognized this as well, and have sought to provide theoretical bases for openness (e.g., Deimann & Farrow, 2013). The theoretical perspective provided below is intended to provide a lens for framing the open practices examined in this study.
This research views openness, open practices, and open scholarship as emerging practices (Veletsianos, in press) and sociocultural phenomena situated in specific contexts and cultures and influenced by the environments in which they take place. This perspective is based on previous work in social learning theory (Brown, Collins & Duguid, 1989; Vygotsky, 1978) and the social shaping of technology viewpoint (Dutton, 2013; Oliver, 2013; Selwyn, 2010). A sociocultural perspective on openness, open practices and open scholarship views these practices as being socially shaped, and the technologies used to enact openness as necessarily, if not always intentionally, embedding their developers’ worldviews, values, beliefs, and assumptions into their design and the activities they support and encourage. By recognizing that open practices are shaped by social, cultural, economic, and political factors, this perspective rejects the notion that such practices are deterministic and holds that, with adequate information and evidence, learners, instructors, and researchers have the agency to accept or reject any particular technology or practice or to find alternative uses for it that will better serve their needs. By adopting this view, as Knox (2013, p. 27) observes, “[r]ather than promoting ‘openness’ as a transcendent societal ideal, or as an essential quality embedded within Internet technologies, research could begin to engage with the ways that individual agencies, social systems and technological production are deeply involved in each other.” This perspective is shared by others in the literature. For instance, in their historical look at openness, Peter and Deimann (2013) show that openness is a technological, social, economic, and cultural phenomenon. As an example to illustrate this premise, they argue that books, 17th century coffee-houses, and mail services—developments that supported the opening of education—were developed partly because society deemed them to be important, and not simply because technological innovations made them possible.

Context: Tall Mountain University

In this study, open practices were investigated in the context of Tall Mountain University (TMU). TMU is a North American public, not-for-profit university that offers undergraduate and graduate degrees and enrolls between 4,000 and 8,000 students per year. The majority of TMU’s courses are taught online, giving digital technology a strong presence at TMU. Nearly all courses are offered on a well-known learning management system. Instructional support for online offerings and pedagogical innovation is provided by a centralized unit consisting of instructional technologists, learning designers, and other support staff, hereafter called the Office for Teaching and Learning. The Office for Teaching and Learning works closely with faculty members, who are generally expected to spend 40% of their time on research, 40% on teaching, and 20% on service.

This institution was chosen as a research site because, similarly to a large number of other educational institutions, openness is not one of its “core organizational values,” like Wiley and Hilton III (2009) suggested. The institution does not have policies mandating or encouraging openness, which makes this case study a “most-likely” design to support the theoretical assertions made pertaining to openness. If no institutional policies exist to encourage openness, and we recognize that openness is a sociocultural construct, then we should expect to see both the presence of openness at TMU as well as evidence of openness being shaped by a variety of environmental factors.

Methods

The goal of this study is to understand in what ways academics at TMU may engage in open practices and sharing. It does not examine whether academics at TMU engage in open practices
in other ways, such as using open access literature for professional development purposes. The
study therefore posed the following research question: Do academics at an institution with no
discernible policies supporting openness share scholarly materials online in an open format? In this
paper, ‘scholarly materials’ refers to both teaching and research artifacts (c.f. Boyer, 1990; Hutchings
& Shulman, 1999).

Data collection
To gather evidence for this investigation, I employed ethnographic data collection methods to
examine academics’ scholarly artifacts and presence and the licenses for use assigned to such
artifacts. In other words, I observed digital artifacts and presence (e.g., publications, participation
on public social media sites) and identified the licenses attached to each one.

The process I used to collect data was as follows: First, I identified and created a case file for 30
randomly selected faculty members at TMU. Next, I used Google to search for scholarly artifacts
by combining the institution’s name and each faculty member’s name (e.g., “Jane Doe” Tall Mountain
University OR TMU). I then examined the first 50 results from this search to identify whether each
result was indeed related to the named faculty member (e.g., by examining listed affiliations in
publications, email addresses, etc.) and whether the result was an open scholarly artifact (i.e.,
whether an open license was attached to it). If the result included evidence of an open practice, it
was saved offline in the individual’s case file for analysis. I followed the same process (search,
examine, archive) using Google Scholar. Finally, those results were complemented by (a) examining
each individual’s institutional profile page, (b) investigating all results generated by searching the
university’s website for the keyword “open,” and (c) examining the library’s website. At the end of
this process, each case file comprised of open scholarly materials identified via the methods
described above.

This data collection method was chosen because it enabled an examination of the presence and
prevalence of open practices in situ. The alternative methods that were considered for this study
(e.g., interviews, surveys) posed a number of problems that could have biased the results and were
thus rejected. For instance, given that prior research suggests that faculty members are relatively
unaware of Creative Commons licensing (Allen & Seaman, 2014), a survey approach to this study
may not have yielded reliable results. Interviews were rejected as a data collection method because
it was assumed that if faculty members’ are unfamiliar with creative commons licenses, the faculty
members that would have responded to an invitation for an interview would be those who were
familiar with, and thus who were more likely to make use of, creative commons licenses. Thus,
collecting evidence of open practices via web searches provided an effective and reliable alternative.

Data analysis
Data were analyzed in an iterative manner. First, I examined all artifacts to gain a broad picture of
the types of open materials discovered. Next, I engaged in a process of coding each individual
artifact according to possible categories in response to the question, “What open practice does this
artifact represent?” The data was coded using an open coding scheme based on my existing
knowledge of open practices because it allowed for iterative, interactive, and comparative features.
Some artifacts fit into more than one category and were thus assigned multiple codes. Once all
artifacts were examined, I studied the created codes and consolidated them into a smaller number
of categories that described the open practices identified as being used by faculty members at TMU.
The process of assigning codes to pieces of data and then consolidating codes into a smaller
number of categories is called thematic analysis. Each theme describes a finding and summarizes
the codes that fall under the theme.
Limitations

The research process described in this paper has three limitations worth noting. First, it is possible that TMU academics are engaged in open practices that were not revealed in the document analysis and discovery methods described above. Second, even though Google Scholar has been used by other researchers in literature discovery methods and appears to provide extensive coverage of the literature (e.g., Anderson & Shattuck, 2012), the reliance on Google services may influence the results in two unique ways: (a) it is unclear on what is and what is not included in the Google Scholar index, and (b) Google search uses a filtering algorithm which may influence the results retrieved. Finally, this study is descriptive and as such it does not provide insights into why academics may or may not engage in these practices.

Findings

More than one third (12) TMU faculty members included in the sample have published at least 1 piece of scholarship in an open access peer-reviewed journal or self-archived their work on personal or institutional websites. Although TMU provides an institutional digital repository, this mostly hosts student theses and dissertations under open licenses. Fourteen faculty members were found to disseminate their scholarship via personal blogs, websites, microblogs, and social networking sites. For example, some faculty members maintain their own blogs, while others participate on social networking sites such as Academia.edu, ResearchGate, and Twitter. Slideshows from academic conferences, peer-reviewed papers, and other research artifacts were shared on these spaces. While sharing scholarship via social media is not necessarily an open practice, and in many instances social media participation did not involve scholarly sharing, in some cases what was being shared was open scholarship.

TMU faculty were also found to create and use/reuse Open Educational Resources (OER) in the form of courses, workshops, training materials, assignments, activities, and syllabi. These were often posted on social media sites (e.g., lectures posted on YouTube). The research also indicated that (a) the Office for Teaching and Learning supports and encourages the practice and (b) the practice has been in existence since at least the late 2000s. The use of open educational resources appears limited to open access peer-reviewed literature and open textbooks, which appear frequently in faculty members’ publicly available syllabi, as earlier research also found (Hilton III, Lutz, & Wiley, 2012). The study also uncovered a small number of larger-scale open teaching activities occurring at this institution, such as institution. Four open online courses offered by TMU faculty members.

Faculty members appeared to favor certain open practices over others, and to not engage in a number of other open practices. For instance, I observed no instances of data being shared with open licenses. I also observed differences and similarities between individuals' practices. For example, I did not find that any individuals shared all of their course syllabi in an open fashion (or at least posted all of them on a centralized space). I also observed that some individuals enacted some practices (e.g., published research in OA venues) but not others (e.g., openly license their presentation slideshows). This finding would seem to illustrate Wiley’s (2009) observation that openness is a continuous construct, in the way that a door can be “wide open” or “open one centimeter,” and Ehlers’ (2011, p. 6) claim that “educational practices are never entirely closed or open” and that “within educational organisations, patterns and configurations of educational practices exist which, taken together, constitute a diverse landscape.” In this instance, it appears that not only is the configuration of openness diverse on an organizational level, but it also appears to be diverse on an individual level with individual faculty varying in the degree to which they enact openness.
Significantly, it also became evident that a number of the studied instructors and researchers make scholarly materials available online for free (e.g., a syllabus shared on a personal blog, a commissioned report published on a personal website), but these materials are frequently provided without an accompanying license or are licensed using the default options provided by the technologies used to share such content. For example, I encountered numerous instructional videos posted on YouTube that were assigned the “YouTube Standard license,” which permits YouTube to distribute videos, enables authors to retain copyright, and allows users to view the videos.

This investigation also uncovered open practices at the institutional level. For instance, the institution makes heavy use of an open source learning management system to support all online and hybrid learning activities. Further, the Office for Teaching and Learning supports and promotes a number of open source digital tools to support instructors in creating more effective and engaging learning designs. The library also provides access to open scholarship, uses a number of open resources for its day-to-day instructional operations (e.g., instructional videos), and publishes a number of its own instructional resources in an open fashion. Finally, some staff members at the institution contribute code customizations to the open source community and publish papers in open access journals, although these activities appear to be limited.

**Discussion**

This investigation offers a case study of open and sharing practices in a natural setting conducted to contribute to our current understanding of openness in higher education. In the course of this investigation, I discovered that even though a number of academics at TMU engage in open practices in the absence of open access mandates, policies, or advocacy at the institutional level, the majority of them do not do so. The rest of this section investigates the implications of the findings.

Even though some open practices are enacted at this institution, there is limited evidence for open practices being prevalent. While faculty members appear to be somewhat present and to share some of their work online, the presence of openness seems to be limited to (some) academics publishing their work in open access formats. Given these results, and having no evidence as to potential initiative or policies at this institution, it does not appear that openness is infused at this institution.

These results suggest that individual (rather than systemic) motivators may be significant drivers of openness in the higher education context. Although I used a different methodology than Scheliga and Friesike (2014), who found that both individual and systemic barriers exist to the adoption of open science, our findings are consistent in that they highlight the influence of individual agency in the practice of openness. Future research in this area should further explore the ways individual and systemic influences impact open practices, including institutional policies, personal values, and mindsets that motivate academics to engage in open practices in general. Such investigations can provide valuable insights for the increasing number of institutions developing open policies and systemic approaches to openness.

A valuable direction for future research would be to examine which open practices are becoming standard in academics’ lives and which are still emerging, and why academics engage in some open practices but not in others. For instance, are some practices professionally safer than others, or perceived to offer greater professional, personal, or societal returns than others? Are some practices driven by pragmatic concerns and others by philosophical beliefs? What guides individuals choices pertaining to openness and how do faculty members rationalize their choice to enact some practices in the open but not others?
The finding that academics share materials online for free but with no explicit open licenses is one that provides a rich area for inquiry. Some of the observed faculty members may have intentionally shared their materials online without an open license. However, given that recent research suggests that though most faculty are very aware of copyright licensing, they are significantly less familiar with Creative Commons licensing (Allen & Seaman, 2014), posting content online without a license or with the default license may reflect faculty members’ lack of understanding of creative commons licensing and may not necessarily reflect their desire to retain copyright. Further, prior research in a variety of fields, including educational technology (Dron, 2006), suggests that default settings have a powerful impact on human choice and behavior (Kesan & Shah, 2006). In the instance of YouTube, for example, it is likely that faculty, for a variety of reasons, use the YouTube default option without much consideration. Future research in the domain could examine (a) the impact of interventions to educate faculty about creative commons licensing and (b) faculty members’ choices regarding licensing, especially in the context of YouTube and other sites that allow for the sharing of user-generated content that is often used in scholarly endeavors.

The findings presented in this paper do not provide conclusive evidence to reveal whether faculty members’ demonstrated their agency to accept or reject particular practices. In fact, the choice of open access publication outlets was the only open practice observed frequently in this study, and is the only area in which one could argue that faculty members demonstrated their agency to make an open choice. However, faculty members’ sharing of free materials online without open licenses suggests that environmental factors also influence the practice of openness; even though YouTube allows individuals to select a Creative Commons license for their videos, its default setting may strongly shape how content is shared. Future research in this area could investigate the degree to which this theorization applies elsewhere and explore how culture, politics, and economics mediate openness.

Finally, the findings presented in this paper should encourage researchers to further explore open practices in situ and further explore how, why, and by whom open practices are enacted in various environments. How representative is the TMU case? To what extent are these results unique to TMU and how may these results change over time as open practices are becoming increasingly popular and mainstream?

Conclusion

In this paper, I described a number of open and sharing practices enacted by faculty at TMU and discussed the implications of individual practices in relation to systemic motivators, relational practices, and technological issues. Although some practices were more common than others, this inquiry suggests that openness is a limited practice at TMU. To better understand openness, the reasons for its presence and lack thereof, as well as its impact, implications, and realities, more research into the open and sharing practices of faculty members is necessary.

References


Temoa: An Open Educational Resources Portal to seek, investigate and inquire

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Abstract

Temoa is a distributor of knowledge that provides a multilingual public catalog of collections of Open Educational Resources (OER). Temoa seeks to support the educational community to find the resources and materials that meet their needs for teaching and learning, through a specialized search system and collaborative social tools. Temoa was established after the need to expand educational coverage in the world, and specifically in developing countries. This paper aims to analyze the system of classification and metadata schemes of Temoa. Interviews were carried out to obtain information. Results shows Temoa’s cataloging process: reviewing OER design, form, and content; the actors participating in the process. We conclude that Temoa is a useful tool that helps to integrate OER into teaching practices, encouraging Knowledge Transfer and Dissemination of innovative educational strategies.

Keywords: OER; digital libraries; cataloging process; teaching practices

Introduction

The development of digital libraries and their study are not isolated events; they are prompted by a series of causes and conditions of social, educational and technological nature. On the educational level, the pedagogical paradigm has been changing the way to transfer knowledge. The old role of the teacher as the central figure of authority has yielded to current models influenced by the constructivist school. According to this theory, students construct their knowledge more actively within and outside the classroom, and the teacher becomes a facilitator of tools for the students to exploit to the fullest (Díaz, 2003).

This idea is reflected in the comprehensive reform of basic education Mexico carried out in 2008, which specifies that the student must be at the center of the educational intervention in a model of competence development, complemented, amongst other factors, by the use of pedagogical materials and technology in the classroom. While education in Mexico has improved in aspects of literacy and coverage, the Secretariat of Public Education (SEP) assumes major shortfalls in the quality and scope of its educational system.

One of these shortfalls is that much of the population lacks access to quality education, technology and information access (SEP, 2007). In an environment where traditional classroom learning is increasingly more complemented with self-construction of knowledge in digital information centers, the lack of connectivity and technological infrastructure that supports this educational model is highlighted. In Mexico, during the 2008–2009 school year, less than a third of primary schools had computers with an Internet connection (SEP, 2009). While there are obvious delays in educational quality and access to technology and information, it is also true that a transition towards more democratic educational spaces and more infrastructure is currently undergoing; in this contexts, digital libraries can provide extra resources for more active, independent students who wish to attain lifelong skills.
In a booming period for information technology in the world, Mexico has tried to capitalize on this trend with public and private efforts aimed at reducing the technology and knowledge gap (Gómez-Zermeño, 2012). In this context, Temoa arose from the need to expand educational coverage in the world, and specifically in developing countries. First proposed in Davos in 2007 under the name of the Knowledge Hub project, this portal is a project of Mexican University Tecnológico de Monterrey.

The word “temoa” comes from the Nahuatl language; it means to seek, investigate, and inquire. Currently, Temoa (http://www.temoa.info) is a knowledge hub that provides a multilingual public catalog of collections of Open Educational Resources (OER); it seeks to aid the educational community to find the resources and materials that meet their needs for teaching and learning, through a specialized search system and collaborative social tools.

This educational tool works in the context of the knowledge society to contribute to reducing the worldwide education gap, particularly regarding access to information. In order to enrich the necessary learning for life, Temoa provides reliable open educational resources that answer to the educational needs of students, teachers, and institutions. This knowledge hub supports the educational community from a public and multilingual catalog of collections of OER. Temoa catalogues selected OER, which are described and evaluated by an academic community, categorized by area of knowledge, education and language, among others (Temoa, 2011). It also provides a user-friendly search engine, through intuitive filters, and it allows the creation of communities around educational resources (Temoa, 2011).

This paper analyzes Temoa’s system from its suppliers to their cataloging process, including the classification and metadata schemes. In this study, interviews were carried out with four key informants in order to answer the following research question: What is the process done for the organization of information in the OER portal Temoa?

While it is useful to review the academic literature on the subject of information organization, experiences of organizations specializing in digital libraries and their organization are relevant to improve current OER initiatives: the process Temoa uses to gather, select, evaluate and index OER, can become a model of good practices. Thus, this study contributes to a deeper knowledge of the practices related to the cataloging process, classification and metadata of OER portal Temoa.

**Open educational resources**

Within the knowledge society, gaps such as inequality in access to sources of information, technological infrastructure, and technological illiteracy can hinder its development. An interesting element to consider is related to the person’s ability to properly absorb and process information with the intention of creating new knowledge. A central element of knowledge societies is the “ability to identify, produce, process, transform, disseminate and use information in order to create and apply knowledge necessary for human development” (UNESCO, 2005, p. 29).

The use of ICT is a central hub for the development of society with a knowledge-based economy. However, it is necessary to educate people to recognize when information is needed and have the ability to find it, evaluate it and use it effectively (Plotnick, 1999, cited in Burgos, 2010).

The steady progress in the development of information technology and global communication foster in different spheres of human activity an uninterrupted creative construction of new products and services in organizations to meet the demands of society on their needs (Burgos, 2010). Globally, more often people make use of websites to access information, perform operations, and maintain communication with third parties, among other service activities.

Education, in this context, cannot stand by and should reach its two main purposes: to ensure the transfer of knowledge from one generation to another and encourage creativity to change what
is already known (Haddad & Draxler, 2002). That is why all information channels should be an integrated and complementary system, so that they reinforce each other, in order to allow acquisition of knowledge and contribute to creating and developing possibilities for lifelong learning (UNESCO, 2000).

Thus the UNESCO in 2002 coined the term open courseware that aims for free access to educational materials, open education resources (OER) provided by ICT, for consultation, use and adaptation to a nonprofit social practice.

The William and Flora Hewlett Foundation defined OER as:

Teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use or 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 (Atkins, Seely & Hammond, 2007, p. 4).

OER represent a digital information object that can generate knowledge, skills and attitudes in correspondence to a training need of the subject (Ramirez, 2007). Open Educational Resources can be found in formats such as JPEG, PNG, MP3, PDF, HTML, WAP, FLASH, among others. Today, OER integrate various types of digital objects among which are full courses, modules, lessons, books, videos, tests, software and any other educational tool or teaching technique to provide free access to knowledge (Atkins et al., 2007).

Temoa considers the following to be the types of materials included in this concept (Temoa, 2011):

- Text documents such as books, essays, textbooks, book chapters and research papers.
- Images, illustrations, graphics, and photos.
- Audiovisual materials, such as interactive multimedia, conferences, class extracts.
- Software, such as desktop applications

The concept behind OER is not entirely new in the context of education. Often, teachers share materials with peers and peer reviews are based on similar underpinnings of open collaboration. Most likely, the novelty of this initiative lies in the ease with which the use of ICT allows the OER to be generated, distributed to mass audiences via the Internet and the legal security that free and open content licenses afford authors and users.

**Organization of information**

People, in all aspects of life “need to organize because they need to retrieve” (Taylor, 2004, p. 1). Information must have an order since not having it would cause great difficulty to find it; thus, throughout history, tools such as directories, dictionaries, catalogs, and many organizing methods have been invented. Taylor (2004) explains that the organization of the information relates to proprietary information packages, with formats ranging from textual to visual and multimedia. Two ways of organizing information sources are metadata organization and subject classification, which are described below.

**Metadata**

Metadata is a set of elements that are used to aid the identification, description and discovery of electronic resources via a representation of their bibliographic description (Martínez, 2007). Baures and Quade (2007) point out generalizations and discrepancies in metadata definitions. The authors argue that definitions vary by historical context and the disciplines that address them, plus it is too early to define a concept that has been volatile in its short history. Thus, they propose a flexible...
and open definition of metadata, where objectives, resource formats or media access are not specified; the authors state that the metadata are often grouped in a set, and each of them individually are called “elements” that represent conceptual units to specify and describe information for a resource. Each element is constructed based on three dimensions:

1) Semantics: meaning assigned to each element.
2) Content Rules: Convention of values, format and ranges for specifying them, and links between different elements.
3) Syntax: structure and coding of compatible machine elements.

Metadata’s usefulness is undeniable: they are essential as they help preserve a digital library’s items, as well as to organize and create links between them, they also provide users access to them (Liu, 2007). Creating metadata helps facilitate the discovery of information through the identification of resources, since they distinguish dissimilar ones and join the ones that are similar (Eden, 2002); this allows the user to customize their search according to criteria that are relevant.

The main functions of metadata, according to the National Information Standards Organization (NISO, 2004) are organization of electronic resources, resource discovery, interoperability, archiving, preservation, and digital identification. With the exponential increase in resources, metadata allows to organize the hyperlinks to them. These lists of hyperlinks “can be built on static web pages with the names and locations of the encoded resources (hardcoded) in HTML”. However, “it is more efficient and increasingly common to construct these pages dynamically with metadata stored in databases” (NISO, 2004, p. 2). This clarification shows the difference in using metadata from other organizational forms such as lists, directories or taxonomies designated with text on the websites. The metadata, however, make portals dynamic by displaying different pages depending on the selection of metadata the user requires in their search for information.

Both Liu (2007) and Taylor (2004), and a large number of researchers classified the functions of metadata in three basic types:

1) Descriptive: Information about intellectual content that allows an item to be discovered and identified as unique, but also to relate it to other similar objects within the system. The author, title, and subject are examples of this type of metadata.
2) Structural: Information for maintaining and managing digital objects. They identify the different parts of the same item, allowing the user to navigate them functionally. Indexes, chapters, and individual pages are examples of structural metadata.
3) Administrative: Information about the internal structure of digital objects. Formats, creation dates, legal terms are some examples.

To be useful to the user community they serve, metadata must comply with the following features (Taylor, 2004):

1) Interoperability: the ability of different systems to interact harmoniously, regardless of their technical aspects.
2) Flexibility: the level of detail in bibliographic records and their adherence to cataloging rules.
3) Extensibility: ability to incorporate new elements for the community of users using the system.

Meanwhile, Martínez (2007) adds a fourth essential characteristic: multilingualism, understood as metadata architectures that respect the linguistic and cultural diversity. Existing systems do this by adopting international standards or locating the user and adapting language.

To maintain a flexible system, with a particular degree of extension but also interoperable, systems can be customized with elements of various metadata schemes conjoined by a group of guides that
explain the function of these elements in one or more schemes; it is also possible to create a metadata crosswalk, a tool that allows the conversion of a scheme to other through a mapping of elements or an intermediary (Olson, 2009). Such practices and tools are important because the same library may use different metadata standards to meet the needs of its resources and information retrieval needs of its users. In the category of general norms, Eden (2002) lists, among others, the Dublin Core Metadata Initiative (DCMI), Encoded Archival Description (EAD), Machine-Readable Cataloging (MARC) 21, Metadata Object Description Schema (MODS), The Open Archives Initiative (OAI) and Text-Encoding Initiative (TEI). In educational metadata standards specifically, Eden (2002) mentions the Instructional Management System (IMS) and the Learning Object Metadata (LOM), ascribed to the Sharable Content Object Reference Model (SCORM).

Puustjärvi (2007) addressed the issue of educational metadata standards to define as systems describing characteristics of a learning object and classified them as syntactic metadata and semantic metadata. While the former describes the structural features of an object such as its format, language, or author, semantic metadata describe the semantic content and the keywords that describe its topic, using taxonomies or ontologies.

As general and educational standards are mentioned, there are several other themes, formats, rights or industries to describe objects, to name a few of the many criteria by which standards are created, which are not always relevant to this study.

**Classification**

Classification is a multidimensional issue, defined according to the area of knowledge and technological approach. Gordon (1999) provides a definition of classification as a topic related to the investigation of the relationships within a group of objects, to establish whether the data can validly be summarized by a small number of classes of similar objects.

The origins of library classification can be traced to the philosophical classification of knowledge and a learning model (Wynar & Taylor, 1992); the difference is that while the latter organizes knowledge itself, the classification designed for libraries sorts the records that express and preserve knowledge, i.e., it is responsible for organizing forms that store contents for accessibility.

Library classification is a tool for the usability of an information center (Atkinson, 1990). By defining it as a useful way of organizing information, Atkinson (1990) emphasizes the term “useful” because it not only organizes the materials, but it does so by taking into account the relationship between them, i.e., gives meaning to their location and grouping in a manner that users can navigate through them and access other useful items. Classification is also a process of differentiation between objects and their properties: those with common features are grouped together under a category, which in turn may be related to others, all subject to semantically higher categories (Chan, 1994).

Wyman and Taylor (1992) pose a number of criteria for a successful classification system, like being inclusive and comprehensive, systematic, flexible and expandable and using clear and descriptive terminology, with meaning for the classifier and the user.

Additionally, from the field of information organization, Taylor (2004) defined classification as “the process of determining where a packet of information fits in a given hierarchy and often, then assigning an appropriate notation associated with a hierarchy level” (p. 359). The same author states that the library classification was created specifically for the purpose of organizing and retrieving not only information packages, but also representations of their characteristics in information systems. The above mentioned is important when it comes to digital libraries, where the physical location of the material is not important, but their logical order and accessibility in a more abstract environment such as the online interfaces and formats.

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Finally, Taylor (2004) complements the classification issue from the perspective of the architecture of the internet sites. A website with extensive information can leverage the unique benefits that these systems provide, unlike other stricter systems. She mentions that a proper classification can help users navigate pages and enrich their textual searches. A clear example of this is that the same concept can belong to different categories, without creating conflicts in the rest of the system. Technology has brought changes in the way knowledge communities produce and categorize information. Cosh, Burns and Daniel (2008) discuss the problem of classification of content produced on the Internet, especially with the advent of Web 2.0, where users have a fundamental role in how to create and access information. Given this paradigm where information sources become dynamic, it is no longer possible to use the old systems of taxonomies, the authors propose as a solution a cloud content, which, unlike the tag cloud, is not created by the users but by an automated formula that takes into account the recurrence of the words in the sources to perform the classification.

Method
A descriptive exploratory study was carried out in relation to the open educational resources portal Temoa. Descriptive designs are procedures consisting of “placing one or several variables in a group of people and other living things, objects, contexts […] and thus provide a description” (Hernández, Fernández & Baptista, 2010). According to Dankhe (1989), descriptive studies aim to familiarize the researcher with an unknown topic, little studied or novel; they seek to analyze further a phenomenon and its components. This descriptive approach was used since it is an emerging practice in education, and a descriptive exploratory approach, merely as diagnostic, and not assessment, was adopted (Gómez-Zermeño, 2012). Thus, Temoa’s specific methods of organization were researched, as well as the characteristics that compose it, and the variables that led to the development team to be guided by these methods.

Temoa is a project born from the need to expand educational coverage in the world, and specifically in developing countries. This site is a project of the Tecnológico de Monterrey, a private university founded in 1943 in Monterrey, Nuevo Leon, Mexico. This private educational institution offers studies at high school, undergraduate and graduate levels. It is one of the largest private universities in Latin America, with nearly 100,000 students and 9,000 teachers distributed on 31 campuses across the country (ITESM, 2010).

One of the most important non-academic activities of this University is their social and community programs. In addition to these, the Technology department serves communities by installing thousands of centers for social development and business advice (ITESM, 2010). In education, the Temoa is one of these community efforts, developed at the Center for Innovation in Technology and Education (Innov@TE), a department that addresses critical aspects of inequality in Mexico and Latin America such as the educational gap and the digital divide; undertaking this mission with technology-based innovation, in synergy with public and private organizations worldwide.

For the selection of the participants, a sampling trial was performed, in which the researcher determined the study subjects relevant to the reality to observe and to provide substance for their immersion in their respective context (Giroux & Tremblay, 2004). For this study, this is relatively easy since the creation and maintenance of the project depend on a small team of people. The study explored the subject of research with the four key members involved in the creation, development and operation of Temoa, who work at Innov@TE.

Interviews were carried out with Temoa developers, to obtain information regarding the creation and development of Temoa. As a research instrument, interviews are used when the problem that is investigated cannot be observed in a natural situation, or if that assessment involves an ethical or logistical problem (Hernández et al., 2010).
Interviews were semi-structured, consisting of a series of questions drawn from the literature review, previously established by the researcher but with room to incorporate new ideas that are useful to the purpose of the study.

Results

In this study, interviews with four key informants allowed to learn about Temoa's suppliers, cataloging process, as well as the metadata and classification schemes they apply. Lastly, information was obtained regarding the adoption of OER for the teaching-learning process.

Temoa's suppliers and quality criteria

Temoa, as an Open Educational Resources Portal, offers materials filtered from other servers and organized so that they are available to any user, while retaining services and systems of quality equal to that of a digital library with its server. Based on Sharon and Frank's typology (2000), Temoa offers a harvesting system, a mechanism that segregates and provides the best websites with digital resources of good quality and useful to be used in education. Therefore, Temoa has a catalog of suppliers of open source electronic resources; since this list of suppliers is ever growing and well over a 1000, it is best to consult it in Temoa’s portal: http://www.temoa.info/providers?sid=26&tid=All&subject=All&tid_3=All

According to Temoa’s website, these suppliers provide OER collections that have been suggested by users and have then been verified by Temoa staff according to their acceptance criteria (Temoa, 2011). Thus, OER must meet the following conditions:

- Access to resources is public and free; access to the content is not subject to payment.
- Access to educational resources is not subject to a subscription or registration of any kind, for example, user account creation.
- The website provider of the resource has a legal section with terms and conditions of use (except in the case of a website subsidized by a government entity) which clearly explains the license or use restrictions to which the contents are subject. The conditions of use of the contents should allow its use for educational purposes.
- The terms and conditions of use of the resource provider do not require the user to send a written request to make use of resources.
- Within the policies and conditions of use, the resource provider does not prohibit direct reference to its contents, that is, does not prohibit a hyperlink or shortcut to your content that avoids the need to navigate the site until the resource is reached (this action is also known as deep-linking).
- Publication of educational resource is indefinite; this means that there is no explicit date in which the resources expire.
- The educational resource provider has a reliable precedent; this means that it is an institution, organization or entity formally established.

Regarding the evaluation of the OER themselves, one of the participants pointed out that great care was put into developing several rubrics to evaluate the suggested OER. These evaluate several aspects such as

I. Content quality
II. Motivation
III. Presentation design
IV. Usability
V. Accessibility Rubric
VI. Educational value Rubric
VII. Overall rating

The following section further explains how and when this evaluation process is carried out within Temoa's OER cataloging process.

**Temoa’s cataloging process**

Temoa is a portal where several actors with different characteristics and functions are involved. To describe the process in which OER are treated in this portal is explained with a metaphor chosen by the site’s developers. The portal shows that OER are diamonds with varying degrees of sophistication: the more stages of the overall process the resource has experienced, the more refined it will become. Accordingly, one of the participants describes Temoa as a factory with different well-identified processes that must result in a final product quality.

As the participants interviewed explained, there are four stages of the review process to ensure the quality of the OER listed in Temoa (figure 1); each one has the participation of an actor:

- **Contributors**: the main profile of these actors is represented mostly as teachers. They can be called experts since they have experience in an area of knowledge that allows them to suggest electronic educational material. According to Temoa's developers these actors record basic metadata, they can also classify the OER, which will be evaluated and corrected later by the cataloger.

- **Auditors**: they are responsible for reviewing the contributors’ submissions, their format, and content; they act as a first filter, checking spelling and writing, and whether the object meets the validity criteria of the resource, if it is indeed an educational resource and is also open access. At this stage of the resource classification process, the audit involves three conditioning actions: if the resource and its description contains slight errors, then it is classified; if the metadata has some mistakes, then the original contributor is asked to make the corrections; finally, if the application does not meet the criteria established by Temoa, then the object is not indexed.

- **Catalogers**: a team is formed by professional librarians, they refine the resource’s description initially provided by the contributor and subsequently revised by the auditor. In this process, they ensure the resource’s quality, by applying the Anglo-American rules (AACR2) standardization processes to classify a resource; a user’s guide has also been developed where Temoa’s characteristics and intentions are synthesized. Catalogers have the final word; they review each resource in detail to establish standardized vocabulary, metadata and subject classification that best describes the OER.

- **Editorial review**: they are specialists for this process related to the review of the OER. They cannot make changes to the metadata and content of the OER.

In short, contributors and auditors first allocate some metadata. Then, catalogers review and add more specialized and technical metadata, and finally, editorial reviewers review the spelling and only tune the details of writing. The following section further explains the metadata and classification schemes applied to OER.

**Temoa’s metadata and classification schemes**

Regarding metadata, Temoa’s developers decided to use standards like LOM/SCORM, which are used to discover learning objects; they also considered the Dublin Core standards, used mostly by
digital libraries for cataloging web objects; and the Open Archives Initiative (OAI), does the same with open objects. Therefore, the team of developers defined a metadata standard based on the needs of Temoa. This definition of metadata is compatible with Dublin Core and SCORM, it is called metadata mapping or crosswalk metadata, and it is an interpreter table with existing metadata, user friendly and according to research carried out by the institution, they are constantly modified (see Table 1).

Concerning the classification of open educational resources, Temoa uses the classification standards of the Library of Congress of the United States, so the information is presented as an intelligible thematic division for interfaces with web content. This scheme, developed at Columbia University, has the characteristics of an electronic format collection, also with regards to the production and demand for various academic programs. According to the developers of the portal, the classification system adopted is sufficient in terms of specification levels of knowledge and breadth of it through its themes and subthemes (see Table 2).

The classification scheme is tree-like; the branches will be longer in knowledge areas that contain more than one resource, presented by topic and subtopic as appropriate. This represents how catalogers specified the resource to a particular subject. The subtopics can develop more knowledge...
levels. This classification system helps users to refine their information search in the acquis. But navigation is even more efficient through the filters Temoa offers; in addition to the general topic or area of expertise, users can filter the resources considering: type of educational resource, presentation medium (text, video, images, software and audio), granularity, provider, creation date,

Table 1: List of applicable metadata for OER in Temoa

<table>
<thead>
<tr>
<th>List of metadata in Temoa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational resource title</td>
</tr>
<tr>
<td>Language of the captured data</td>
</tr>
<tr>
<td>Resource Description</td>
</tr>
<tr>
<td>Address (URL) of the resource</td>
</tr>
<tr>
<td>Topic: General</td>
</tr>
<tr>
<td>Year of creation</td>
</tr>
<tr>
<td>Duration/Extension</td>
</tr>
<tr>
<td>Resource’s Genre</td>
</tr>
<tr>
<td>Granularity</td>
</tr>
<tr>
<td>Content language</td>
</tr>
<tr>
<td>Presentation medium</td>
</tr>
<tr>
<td>Topic: Specific</td>
</tr>
<tr>
<td>Topic: Keywords</td>
</tr>
<tr>
<td>Key LCC</td>
</tr>
<tr>
<td>List of Sections</td>
</tr>
<tr>
<td>Author(s)</td>
</tr>
<tr>
<td>Audience educational level</td>
</tr>
<tr>
<td>Benefits for end users</td>
</tr>
<tr>
<td>Teaching recommendations</td>
</tr>
</tbody>
</table>

Table 2: Areas of classification of open educational resources

<table>
<thead>
<tr>
<th>Area of Knowledge</th>
<th>Themes</th>
<th>Subthemes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art and Architecture</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Business and Economy</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>Engineering and Applied Sciences</td>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td>General</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Health Sciences</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>History and Archaeology</td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>Journalism and Communication</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Languages and Literature</td>
<td>17</td>
<td>27</td>
</tr>
<tr>
<td>Law, Politics &amp; Government</td>
<td>7</td>
<td>32</td>
</tr>
<tr>
<td>Music, Dance, Drama &amp; Film</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Philosophy and Religion</td>
<td>2</td>
<td>23</td>
</tr>
<tr>
<td>Science</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Social Sciences</td>
<td>12</td>
<td>54</td>
</tr>
</tbody>
</table>

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status (suggested, cataloged and audited), language, the end user (teacher, student and instructional designer), compatibility with cell phones and educated audience.

Temoa considers the selection of this classification system is related to the nature of open source, and recognizes the freedom that is given to implement and customize their content, under the constraint that it shall not be for profit, as the licensing is by Creative Commons Attribution-Noncommercial 3.0.

Because of the complexity and breadth of Temoa cataloging process, one of the participants highlights that while there is increasing improvement in the processes, certain errors continue to occur as:

- Gaps in the description of the resources
- Assigning numerical LC signatures that belong to physical libraries
- Source errors unidentified by catalogers and auditors

The same informant explained his belief that the errors come from causes such as:

- Difficulty in communicating well the good practice in cataloging and classification of resources, since the catalogers are not physically in the offices of Innovate, where Temoa department develops, but work in libraries of other campuses of the Tecnológico de Monterrey.
- Poor execution of the processes of cataloging: not reviewing the resources in time and correct way.
- Poor performance or misinterpretation of the classification processes: because of the catalogers' experience in physical libraries, they extrapolate their practices to a process of a digital library as Temoa.
- Poor filling of origin because of collaborators who are not paid a salary or automated filling data.

By identifying this information, it is possible to design better training for the participants, and it keeps Temoa developers mindful of the importance of keeping quality control practices throughout all of the processes.

Adoption of OER for the teaching-learning process

Temoa’s mission is to improve educational practice and support closing the gap in global education. To achieve these purposes, it promotes in teachers at all educational levels the adoption of open educational resources, the exchange of learning experiences in the use of these and maintain a high quality in variety, utility, reliability and availability of its directory of OER (Temoa, 2011).

According to the OER documentation cycle, the ultimate purpose of OER is their integration into teaching. That is why Temoa developers define the status that is assigned to the resource when it is under revision (see Figure 2), so the user can see a symbol on the page that identifies the status of the OER; this helps users to make a decision whether to select or not any OER.

Educational research studies related to the use of ICT have agreed that OER represent an opportunity to put into practice many of the principles of the constructivist educational paradigm. One of these principles states that it is the students who build their learning from concrete actions; individually but also collaboratively. Therefore, it is necessary to design and/or implement dynamic learning environments proposed by the teacher.

Regarding environments, they derive from the interaction between individuals and the natural setting in which they operate, this situation attributes pedagogical actions that lead the learner to reflect on their and other people’s actions (Ramírez, 2007). Thus, a learning environment is defined as an enclosed environment, which incorporates the characteristics of life, nature and work, with
the intention that the students study, reflect and intervene in it (Andrade, 2007). According to Waldegg (2002), interactive technology is a useful tool to motivate students to develop processes of what and how to learn.

OER play a significant role in learning environments to seek the realization of the educational objectives of a study program, even an entire curriculum proposal. In the particular case of Temoa, two actions that have been encouraged by educational practice stand out:

- **Knowledge Transfer.** The diversity of open access digital resources that exist on the web concentrate large volumes of data in several formats like HTML, PDF, FLASH, among others. ICT remains in constant production and exchange of knowledge and practices, hence the emergence of new formats and applications to reduce the information to deposit it on the web. In a recent study about Temoa’s OER, Contreras (2008) findings seem to indicate that using OER favors changing learning environments, further encourages students to assume an active role and autonomy in selecting a range of topics that allow them to achieve the goals of a subject. Also, Contreras points out that it is possible to transfer content from other educational institutions when considering issues such as 1) identifying whether the university that shares content is recognized nationally or internationally; 2) considering the language in which the information is; 3) conduct a study of the contents and the relevance of the knowledge to transfer in a new context; 4) select the information that can be transferred; 5) design tools that enable the transmission of new information and adapt it to the framework of the target user, without losing the originality of the resource; finally, 6) assessing the transferred resource’s usability, as well as the acquisition of new knowledge and questioning whether it was possible to add new elements.

- **Dissemination of innovative educational strategies.** It is clear that information and communication technologies facilitate the digital dissemination of knowledge (content), but they also support the design of innovative strategies that have improved teaching-learning experiences of teachers who have adopted OER (Burgos, 2010). This is possible in Temoa through

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**Figure 2: OER Specification status**

<table>
<thead>
<tr>
<th>Badge</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suggested ER</td>
<td>The educational resource has just been suggested by a user; it has not been reviewed yet, and it may still be rejected if it does not meet the criteria for acceptance of an Open Educational Resource.</td>
</tr>
<tr>
<td>Audited OER</td>
<td>The educational resource has been reviewed by the educational community (from the same area of knowledge), ensuring that the resource meets the criteria for acceptance of an Open Educational Resource, it operates correctly, and the basic description is provided in the bibliographic card.</td>
</tr>
<tr>
<td>Cataloged OER</td>
<td>The open educational resource has been further reviewed concerning their functioning and has been enriched with additional descriptive metadata such as subject categories and keywords controlled only by a librarian.</td>
</tr>
<tr>
<td>Adopted</td>
<td>The resource has been incorporated into learning activities; information is provided on how it is used.</td>
</tr>
<tr>
<td></td>
<td>The resource has been rated by other users, based on the perceived value of its use in teaching and learning activities. The reviews appear in the description of the resource, indicating the author, evaluation and a comment made about the experience with the resource.</td>
</tr>
</tbody>
</table>
Temoa: An Open Educational Resources Portal to seek, investigate and inquire

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“metadata, which is data that describes other data, and they are used together to describe and represent a digital object (…)” (p. 4). With this, Temoa developers have established monitoring mechanisms that allow them to recognize and support the educational practices that have been generated in the experience of OER use. A monitoring mechanism was to create a space in the portal called “Participate and share”, this presents a directory of users that have shared experiences and innovative educational practices for topics or courses. Thus, the user shares, copies and reorganizes information from others to construct new knowledge to suit the needs of their learning environments, all this without losing the original sources (Temoa, 2011).

Both actions show that Temoa has proved an efficient and reliable tool for the selection of OER. In a study regarding values in artistic activities developed by Cedillo, Peralta, Reyes, Romero and Toledo (2010), authors confirm that “OER are complementary, innovative and motivating resources, to address the daily educational practice, as they encourage the teaching-learning process and contribute to the construction of meaningful learning that benefit the academic work and curriculum” (p. 119). Also, these teachers designed teaching strategies for insertion of these OER in class, each one applied it in their class contexts and in different institutions, which allowed to enrich the study subject.

**Conclusion**

Since its inception, Temoa’s developers considered literature review and consultation with education experts to meet the educational aspects of the portal, as well as librarians and information technology developers for the technical and technological aspects that determine the methods of development, preservation, organization and presentation of information in Temoa.

As the participants in the study informed, Temoa’s subject classification and metadata schemes use are based on recognized standards. For metadata, these have incorporated Dublin Core, as the most widely accepted standard for Web pages and LOM/SCORM to meet the particular needs of the description of educational resources. Meanwhile, the HILCC system, a hierarchical classification oriented to digital libraries based on the Library of Congress Classification is used. The portal is also ascribed to Open Access Initiative guidelines, which allows resource sharing metadata between open source sites. The assignment of metadata and subject classification is also performed following standardized cataloging rules such as the Anglo-American rules. This use of metadata standards, classification and cataloging of the materials follow the recommended guidelines and best practices for digital projects at the University of Maryland (Schreibman, 2007), NISO (2004), and Western States Digital Standards Group (2005).

The processes are well defined and executed by specialists in different areas. The resources are provided by teachers and peer reviewed by auditors. The organization of these is run by a team of experienced professional catalogers in libraries, coordinated and supervised by a chief librarian. This has been, in many occasions, with their respective training for different roles and following the rules of a manual, in the case of catalogers.

Temoa’s developers, who also have technological and technical profile studies or on library systems, procure documentation supporting their strategies, indicators and user testing. Through these practices, the organization through which users can access materials is constantly questioned, considering their intelligibility, number and relevance for the purposes of the portal. The features offered by the portal are constantly evaluated and the interpretation and the use thereof by users
is reflected in constant changes in the implementation of the various metadata and allow not only interoperability but also the flexibility and extensibility of the same, as explained by Taylor (2004). This way, Temoa is conceived more as an entity in constant improvement that a finished product.

Some of the issues and challenges identified in the research are: problems throughout the chain of the presentation of resources, errors in filling metadata in different stages of the same; the dispersion of the cataloging staff, whose members work in different states of the country, which does not facilitate the integration and teamwork; the lack of a clear strategy in the development of the portal, making it difficult to identify the target users and, therefore, also the process of collection, development and organization of the information. However, several measurements are being proposed and studied within the developing team, to solve these issues.

Based on the process of documenting freely accessible objects in electronic format, it has been shown that Temoa maintains a comprehensive quality process that reviews from the OER design to the format and content of the information. Probably the one aspect that Temoa cannot guarantee is the preservation of the resource, this is due to having a harvested implementation, the resource provider may have changed or modified the URL, the server is in restructuring, and/or even the OER may have been “deleted” it from where it was hosted.

Temoa has been designed in order to contribute to educators, their educational practice and to the ongoing process of bridging the digital divide in access to information. This tool aims to be present in all technological devices, and under the idea of mobile learning, Temoa intends that the OER be compatible with smartphone technology for users to have them at all times. It continues to constantly innovate its metadata and continues to collect resources, but more importantly, it relies on the socialization of knowledge accumulated in the web.

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Effective web videoconferencing for proctoring online oral exams: a case study at scale in Brazil

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Abstract

The challenging of assessing formal and informal online learning at scale includes various issues. Many universities who are now promoting “Massive Online Open Courses” (MOOC), for instance, focus on relatively informal assessment of participant competence, which is not highly ‘quality assured’. This paper reports best practices on the use of a web videoconferencing application to quality control student assignments through online oral examination at scale. In this case study, we examine the use of a simple online conferencing technology FlashMeeting (FM) by a Brazilian University to provide ‘quality assurance’ in the assessment of twelve online postgraduate courses in Law for 20,000 students. Our research questions investigate the benefits and recommendations of using FM in online oral exams at scale. Our qualitative and quantitative data analysis centres on 3,462 short format interviews through FM conducted for this purpose by a group of around fifty assessors from September 2008 to September 2012. The effective use of FM provided evidence with respect to high quality assurance recognised by the Institution with respect to: students’ identity, their knowledge and ownership of written work. The key benefits identified from the perspective of assessors and students were: reliable examination, credible technology, authentic assessment, interactive e-Viva, low cost, scalable process and practical testing in terms of time, effort and money.

Keywords: Assessment at scale; quality assurance; videoconferencing; Massive Online Open Courses; Higher Education; oral online exams; e-Viva

Introduction

The issue of quality assuring the work of a remote student has been a long-standing challenge to Distance and Open Universities (Gaytan, 2005; Robles & Braathen, 2002). Most of these organizations still place an emphasis on summative exams in a controlled physical proctored location (Hollister & Berenson, 2009; Harmon & Lambrinos, 2008; Wynne & Lopes, 2006). A human proctor in a physical exam centre manually checks the student identity paperwork before the student is invited to complete a short time length ‘hidden paper’ examination. Many proctoring centres and technologies are now commercially available. Their aim is to add a quality assurance element in ‘observing and recording’ the student during the exam on a ‘locked down’ computer via a webcam to reduce the temptation to cheat during the hidden paper test.

The examination paper is presented in this way because it can be guaranteed to be the student’s work due to the physical constraints of the exam venue. The venue may be in many different world locations, the exam may even be on a ‘locked down’ networked computer to allow rapid submission of the work, but the management of the process would be recognizable to someone examining two centuries ago. However, the assessment challenge has now broadened to many more organizations in conventional universities who are now promoting “Massive Online Open Courses” (MOOC) online.
These are aimed at a very large-scale student learning experience, and currently focus on relatively informal assessment of participant competence, which is not highly ‘quality assured’ such as a ‘badge’ based (Cross, Whitelock & Galley, 2014) on a multiple choice quiz (Perna et al., 2014). As MOOC provision matures, the issue of providing ‘high stakes’ examining for the learner experience (Koller, Ng, Chuong & Chen, 2013) is gaining focus—in particular because the certification component of a MOOC offers a possible business-model driven by “for fee” element in an otherwise free and open system.

The value of any certificate must rest on a number of quality assurance issues: Did the student actually attend the course, and contribute? Did the student submit assignments and answer questions alone or with the assistance of others? Is the student able to demonstrate the competences that the course aims to teach? A range of work has sought to ensure student compliance with the course structure, from simple systems that require a student to manually check the completion of each ‘course page’ in the online learning environment, to research into systems, which require students to constantly confirm their attention during the replay of recorded lectures (Canessa, Tenze & Salvatori, 2013). Of course, ensuring that a student has been exposed to the offered teaching material does not assure that anything has been learned. At higher levels, certainly, a preferred technique is to use ‘low stakes’ continuous assessment through the teaching. Short answers or multi-choice questions, for instance, allow the quicker student to skip content they find easy whilst still confirming their competence as they move through the material. In all such cases, ‘raising the stakes’ in e-Assessment is clearly a challenging topic in education both through the more effective use of technology and in re-thinking the nature of the examination itself.

The use of remote videoconferencing to reduce the cost and complexity of face-to-face physical meetings is understandably popular. Indeed, webcam videoconferencing technology is now very common for many meeting formats, with a wide range of robust technical systems such as Skype™ and Apple’s FaceTime™ and with cameras now commonly built into many computers, tablets and phones. In contrast, for events which are considered “high stakes”, i.e. where the process of the meeting can be complex and the outcome is very significant to participants, the replacement of the physical with the virtual has been slower. For ‘high stakes’ outcomes such as job interviews, the potential has been explored as the technology has matured, and early reservations (Kroeck & Magnusen, 1997) are being overcome. For example, a compelling case shows that short online video interviews are just as effective in student selection for a graduate entry programme as the much more expensive, face-to-face equivalent (Tiller et al., 2013). However, whilst video interviews are now in use for testing and validating performance effectively, for instance in language exams, users are still reporting concerns over increased stress of the online performance, over how they might feel about face-to-face assessment, and concerns about the technical set up, use of ‘recording’ features and need for effective technical support for the technology (Kim & Craig, 2012). In all these examples, there are still concerns about the quality assurance of the online event relative to the physical, and the different pressures it may place upon the participants.

The face-to-face viva voce examination remains a ‘gold standard’ for testing a student’s knowledge of a body of work. It is particularly popular in higher degree programs in which the examiner can spend time to interrogate a student with respect to a written submission they have made, often a thesis or dissertation. One valuable attribute of an oral examination, in combination with a written submission, is that it can be used by an expert examiner to both probe the students’ knowledge of topics which were not covered well in the written submission, but most especially that it offers a quality assurance opportunity to test the students ‘ownership’ of the submitted work, and to reduce the risk that the claimed work is actually that of another.
As a high-quality procedure, the oral examination is typically reserved for ‘very high stakes’ examining due to its cost and complexity to organize and manage—requiring a physical meeting of the student and the expert examiner, plus often the need to host an observer (to witness the process and to accommodate any ‘appeal’ claim that may later arise). In particular, because the examiner is scheduled with one student at a time, this generally rules it out of any large-scale process due to the expense of the examiner’s time and physical logistics of meeting with each student to discuss their work. If a model of videoconferencing use could be applied to bring the gold standard to a wider use at scale that might be very compelling.

In this study, a significant number of online oral examinations are analysed, including quantitative data provided by the FM web conferencing application as well as qualitative feedback from students, examiners, supervisors and course coordinator. Our investigation centres on “how can we assure the quality of a large-scale, low cost and flexible distance education online assessment?” The objectives of this investigation are to discuss not only advantages and challenges of oral exams through a web videoconference application, but also suggest recommendations grounded on best practices. This investigation therefore aims to address these questions:

- Can online videoconferencing technology be effectively used as a quality assurance mechanism in a scaled, low cost and flexible way for distance education? What are the requirements and suggestions?
- What are the key benefits and success factors in the effective deployment of online video supported viva-voce examinations?
- What would be the expected barriers and challenges to QA in a distance assessment context?

Research context: case study in Brazil

The case study focuses on the education network LFG, ‘Luiz Flávio Gomes’, which has partnered with UNISUL, Universidade do Sul de Santa Catarina, for providing the following online postgraduate programmes in Law:

1. Constitutional Law
2. Public Law
3. Civil Procedural Law
4. Social and Practical Function of Law: Public Law
5. Social and Practical Function of Law: Tax Law
6. Criminal Sciences
7. Tax Law
8. Procedural Law: Great Transformations
9. Notary and Registry Law
11. Election Law
12. Constitutional Limits of Investigation in Brazil

The agreement between UNISUL and LFG was in force from 2005 to 2008. More than 20,000 students registered for the Law programmes offered. In compliance with the rules and regulations of the State Council of Education of Santa Catarina and the National Council of Education, vivas were initially optional and later compulsory for two of the programmes, namely Public Law and Civil Procedural Law.

The certificates of students who opted for a viva bore a reference to the rules and regulations of the State and of the National Council of Education. For those who chose not to have a viva, these
certificates bore a reference to the rules and regulations of the State Council of Education only. The certificates of the students enrolled in the programmes which required a viva bore a reference to the rules and regulations of both the State and the National Council of Education and those students who did not show up for the compulsory viva were not approved and, therefore, were not issued with a certificate.

Every semester, registration was open to each of the above-mentioned programmes with a minimum requirement of 100 students registered per programme. In some cases, the number of students registered per programme was as high as 1,600. The duration of these programmes was one year and a half.

The pedagogical methodology adopted by LFG-UNISUL focused on online-based and telepresence courses grounded on four key features: synchronous and asynchronous content delivery, continual online learning support, written and oral e-assessment as well as two possibilities of certification, namely Training for the Job Market (with 360 contact hours) and Higher Education Teacher Training (with 450 contact hours). The two modalities shared the same curriculum and the Higher Education Teacher Training Certificate had two additional courses each with 45 contact-hours:

1) Research Methodology; and
2) Higher Education Methodology.

Course content
A team of external professors and professional specialists in Law was responsible for running telepresence lectures once a week as well as developing the learning content. Students would participate in the tele-lectures at the regional centre located closest to their work or home. They were also registered in the virtual environment denominated EVA (Espaço Virtual de Aprendizagem) —Learning Virtual Space, of UnisulVirtual. In the EVA, they could access learning materials as well as group activities, optional individual exercises and discussion forums.

Learning support
The UnisulVirtual team responsible for these programmes consisted of 40 lecturers, 7 programme co-ordinators, 14 student support staff and 30 clerical and technical staff. Learning support was offered by the lecturers in the EVA and other kinds of support were provided by the Student Support Team either in the EVA or by telephone. Pedagogical support was also offered during the learning activities in the EVA as well as during the supervision and assessment of students’ final papers at the end of the programme.

E-assessment
The key aspects for assessing students were quality of learning outcomes, authenticity and tele-lecture attendance control. The assessment system was based on online assignments and/or exams as well as a final exam through web videoconferencing based on safety precautions for ensuring the reliability and credibility of results. E-assessment for each course included all activities available in the EVA (including a distance exam), and a face-to-face exam. At the end of the programme, students had to produce a final paper—with its oral defence through an online viva required by only two of the programmes: Public Law and Procedural Law: Great Transformations. The lecturers were responsible for mediating the teaching and learning processes and also for motivating students and creating learning opportunities. They could be reached through the EVA to provide students with guidance during the activities of each course or module. They were also in charge of formulating
and grading exams. The Student Support Team was responsible for giving students technical, administrative and, occasionally, motivational support.

The online viva process involved a group of fifty three lecturer-examiners from UNISUL. The examiners were provided with a ‘pre assessed’ final paper for each student, and were briefed that their primary purpose was to confirm that the paper was the work of the submitting student. The paper itself was to have been already graded by the final paper supervisor before the date of the scheduled oral exam. Examiners should only confirm students’ identity and probe their knowledge of the submitted work to ‘quality assure’ the submission. Furthermore, each session was ‘auto recorded’ to a unique coded URL hosted on the event server (this being a default feature of the FM service). The recording was deemed to be ‘co-owned’ by both the student and the institution and was not to be edited by either party. Ergo, the student was at liberty to review her/his performance at any time and indeed to share it with family or friends at their discretion. Equally, the institution could use the recording to confirm and cross-check any unresolved identity issues, but also the student could use the recording as evidence in any appeal.

**Certification**

Students were issued with a Postgraduate Certificate provided that: they had attended at least 75 percent of the tele-lectures in the regional centres; they had obtained no grade under “C” in any of the courses during the programme; their final papers had obtained a passing grade; and they had obtained a passing grade after the viva in the case of the two programmes which required an oral defence of the final paper. The weightings of the exams held for each course were as follows: distance exams/assignments/VLE activities (40 percent); face-to-face exam (60 percent).

Vivas were conducted via the web videoconferencing tool called FlashMeeting (FM), developed by KMI—the Knowledge Media Institute of the Open University UK—and could last no longer than 30 minutes. Students’ presentations of their final papers could last up to 20 minutes and the remaining minutes could be used for answering questions if necessary. The requirements for the oral presentation were a clear identification of the student through a webcam as well as clear sound during their presentation for the examiners. Students were told that the presentations were recorded and that they would be accessible at any time. In case of fraud the FM replay can be used as a proof. The student received the URL of their presentation and they were allowed to share them with their colleagues and family. In order to be approved, students must be able to show the knowledge presented in their written papers.

The viva was compulsory for the programs of Public Law and Procedural Law but optional for the other programmes.

The UNISUL staff confirmed that students were carefully instructed with respect to the objectives of the e-Viva, for example, to:

- Confirm their authorship of the written assessed work under consideration;
- Prove that their identity in the e-Viva was a match with the name on the written work;
- Demonstrate that they know the content of the submitted work.

Students and staff confirmed that they understood the requirements to succeed in the e-Viva: (a) that they could use the minimum infrastructure—webcam and audio; (b) that they would be expected to interact with the examiner, answering questions during a 30 minute ‘booked’ online event; (c) that the minimum ‘acceptable interaction’ time would be 15 minutes, of the 30 minute slot—to allow for any technical issues; (d) that the assessors should be objective and the students should provide complete answers; (e) and that any participant could attend the e-Viva from any location, e.g. from home, a local ‘LAN house’ or at a Learning Centre.
Research design: approach and technology

This case study is based on qualitative and quantitative data analysis of 3,462 short format interviews through the FM web videoconferencing technology conducted for this purpose by a group of around 40 assessors from September 2008 to September 2012. A total of 3,205 vivas were held which included rebooking of events, out of which 1,300 were compulsory and 1,905 were optional during the period of September 2008 to September 2012.

FM is a web video conferencing system, which has come from the FlashMeeting project (http://flashmeeting.com) hosted at the UK’s Open University (Scott, Tomadaki & Quick, 2007). FM events are fixed in time, and therefore must be booked. The system generates a unique web URL for each event, which acts as a key to the live meeting, when circulated to meeting attendees, who simply click on the link to gain access to the videoconference. Attendees do not need to be registered in the system or have an account to participate. The controls to the system are very simple, and typically FM does not require any additional downloads to an up-to-date web browser. Generally, events are set to “auto record” on the server, and those recordings are available via the same URL as the live event, so that a participant in the live meeting already has ‘the key’ to the recording. FM recordings can be edited, annotated and syndicated—but these features were not used in this scenario. The application provides a ‘push-to-talk’, simple audio/video broadcasting which allows only one person to speak at any one time; with a hand-up to talk model to speak in which the current ‘speaker’ chooses when to hand over to any requesting user. There is a parallel text chat channel in which any participant may type during the event.

Figure 1 presents two screenshot views of an e-Viva event which was conducted 11th March 2011. They show a view as the participants would have seen it live (figure 1a) and how the same event would appear as a recording (figure 1b). (Note the images of participants have been replaced and the names obscured with ‘xxxx’ to preserve anonymity; but all other features remain unedited). In figure 1a we can see that the examiner (here designated as Prof Dxxx) is addressing the student, and the student (designated Rxxx) has raised a hand to respond. Figure 1a is presented from the student’s point of view, and shows that the examiner is speaking with more than twelve minutes of the ‘booked time’ remaining. However, she has already typed the only text chat line, which was used in this particular event: “aprovada”, meaning ‘you passed’, so is probably drawing this e-Viva to a close. In the recording (figure 1b) we can see an earlier moment in the event (elapsed time is 2 min. 42s.’, indicated by the segment highlighted to the right of the screen, and the ‘playback line’...
in the bottom visualization starting to play the student’s first long answer (the horizontal bars in the Rxxx line being the student speaking). This event can be replayed by anyone who has the URL and users who are administrators in the FM can also export the meeting to an audio file, which might be used for transcription.

In FlashMeeting, the metadata produced after each meeting can be used to interpret the event in different ways (see Figure 2). For example, these different kinds of events may contain different communication patterns, which can be interpreted in different sense-making representations. These graphs can be a timeline of the meeting visualization or the event shape graphics, which can be grouped by events of an online community (Okada, 2008). The IP resolutions of FlashMeeting users include information about the use of the tool by different communities. Using people’s IP addresses, their location can be plotted on a world map. In this way, maps can be generated to show the distribution of users for both the attendance of live FlashMeetings and FlashMeeting replay access. For example, the IP resolution of the users connected to the live FlashMeetings shows how the tool is being used to connect people from the same social network or community of practice, while the IP resolution of the users viewing a public replay shows the learning impact of the event reuse in different parts of the world (Okada, Tomadaki, Buckingham & Scott, 2008).

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Duration</th>
<th>Chat Msg</th>
<th>Users</th>
<th>Names of users</th>
<th>IP</th>
<th>IP Map URL</th>
<th>Replays</th>
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<td>1</td>
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</tr>
<tr>
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<td>2</td>
<td>1</td>
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<td>Prof. Maria</td>
<td>15</td>
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<td>3</td>
<td>1</td>
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<td>FCPU09</td>
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<tr>
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<td>15</td>
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</tbody>
</table>

**Figure 2: FM Metadata exported to an Excel file**

Based on FM Metadata (Fig. 2), the quantitative data related to all web conferences were analysed to identify meetings attended, meetings replayed, meeting with chat, meetings’ duration, number of participants and frequency of bookings.

Approximately 4,648 events from 2008 to 2012 were booked by the UNISUL department of oral examinations support. These events include 3,462 oral examinations as well as 1,186 events not attended or attended by only one person. All participants were aware that meetings were recorded, could be replayed either by students or Institution. Approximately 60 percent of meetings (2,029) occurred without chat, which means participants could interact well using only the broadcast audio/video. In order to identify patterns and most frequent format of events, data analysis comprised the timelines of the shortest and longest exams with or without chat as well as with and more than two users. A few categories emerged, which were described in findings: short e-Viva with tests, short
interactive e-Viva without tests, long interactive e-Viva, long e-Viva with student’s presentation, meetings with three participants and administration meetings. These categories were used to select random sets of events for qualitative analysis of the audio transcription, which allowed the detailed description of these six types of events and the elaboration of qualitative instruments: a semi-structured questionnaire with UNISUL University and a script for open interviews led by the Open University.

Therefore, qualitative analysis was sought to add insight to the quantitative data discussed above. In the context of formal examining, the intrusion of additional surveying was kept to a minimum; and it was felt that the staff experience was at least as important as the student experience of this process. Examined students were surveyed in two phases: firstly, a written semi-structured questionnaire was distributed by the UNISUL organization in 2013; secondly, the OU survey team contacted a small sample of students to conduct a series of open interviews.

The questionnaire was distributed to 100 students, sampled from the latest group of e-Viva exams in 2011–2012 to run through this system; and for the interviews five students agreed to take part in the more detailed qualitative follow up. The OU team also interviewed an additional seven UNISUL staff members involved in the e-Viva process: the programme coordinator, the technical support leader and five assessors. These open interviews discussed the interviewees reflections on the e-Viva processes which took place in 2012 and earlier, and all interviews were conducted in the latter half of 2013. A few categories emerged from the qualitative analysis of semi-structured questionnaires and open interviews with students: feelings, preferences, suggestions for examiners and recommendations for other students. Other categories emerged from the examiners’ interviews: requirements for online exams, solutions used by students related to low internet connection and institutional benefits.

**Findings**

Based on quantitative data analysis of 3,462 FM web conferences, 90 percent refers to successful e-Viva meetings (3,147). Sixty three percent (1,990) were expected meetings whose duration varies from eleven to twenty minutes. While thirty seven percent (1,157) were short meetings—seven to ten minutes. This means that even due to any technical reason or delays, the shortest period of seven minutes was enough for a successful oral exam.

There were 3,202 e-Viva events, which took place with only two participants, the student and the examiner. A further 143 events were conducted with an additional attendee—typically either technical support person or a co-supervisor in attendance.

There were 32 coordination events for staff; and 85 technical events which took place during the surveyed period. Approximately 26 e-Viva events were booked per day, with two parallel meetings during the most popular time for participants: lunch time (11h00–14h00) and late evening (16h30–19h00).

According to the UNISUL coordinator, students were not supported by any prior training on the use of the system and relied upon “local technical support” for any difficulties encountered. Indeed, approximately 70 percent of students elected to take the e-Viva in a local University approved Learning Centre because it was quiet, and with a good quality, guaranteed internet connection. None of the students had used the system previously, but the majority (90 percent) reported that they found the system easy to use. Students who encountered problems were able to ‘rebook’ a new slot (e.g. where an event, which made them late for their booked slot, or where the 30 minute slot was taken up with too many technical issues).
Common e-Viva patterns

After selecting and analysing only the successful events (not used for testing, over ten minutes duration and with at least two participants), it was possible to identify six common patterns:

(1) **Short e-Viva with tests:** These online meetings comprise four minutes of tests and introduction, then seven minutes of questions and answers and finally less than one minute of communication of results. Figure 3 shows a student (Melissa) interacting with her examiner (Deisi). The event started at 11min. 5s., Deisi and Melissa started testing her equipment, then Deisi asked two questions (Q1, Q2), Melissa replied each question during approximately two minutes (A1, A2).

![Figure 3: Short e-Viva with tests](image)

(2) **Short interactive e-Viva without tests:** These online meetings comprise ten minutes of several questions and answers with less than one minute of communication of results. Figure 4 shows a student (Julio) interacting with his examiner (Fabio). The event started late at minute 20, but soon Fabio and Julio realised that their equipment was fine. Fabio presented six questions which were replied by Julio fast (with answers less than one minute). The online exam lasted approximately 7 minutes.

![Figure 4: Short interactive e-Viva without tests](image)

(3) **Long interactive e-Viva:** These online meetings consist of 15 to 20 minutes with several questions and answers with less than one minute of communication of results. The example presented through Figure 5 shows a student (Leonardo) interacting with his examiner (Prof. Andre). The event started at minute 0, Prof. Andre presented seven questions with comments, which were replied by Julio with less than one minute answers.
(4) **Long e-Viva with student's presentation:** These online meetings consist of 20 minutes in total with student's presentation followed by questions and answers. Figure 6 shows that during the first two minutes, the student Daniela and examiner Prof. MSc Susana tested their equipment. Daniela then presented her work in ten minutes. During the next seven minutes of interaction, the examiner Susana asked two questions which were replied by Susana. The last minute the examiner presented the result and the student shared her feedback about the assessment.

(5) **Meetings with three participants: student, supervisor and examiner:** These online meetings were rare. Figure 7 shows the student (Marco) his supervisor (Dr. Antonio) and the examiner (Carlos). During the first eight minutes, the student Marco presented his work, the supervisor Antonio then shared comments about the written work, in which some paragraphs should be
presented as a quote with student's comments and interpretation. Student agreed with all changes. Examiner Carlos presented a few questions, which were replied by the student correctly. He was then approved after resubmission of his written work.

(6) Administration Meetings These online meetings lasted one hour. Figure 8 shows the person responsible for booking the exam meetings (Vinicius) discussing with all the other five Units in Brazil for scheduling the period of FMs for each group of student.

![Figure 8: Administration Meetings](image)

Outcomes from qualitative data analysis were grouped in two categories: the student and Institution view.

**The student view**

Students were clearly aware of the barriers inherent in this approach. For example, some interviewees clearly felt that this format was not entirely satisfying, and that a face-to-face alternative might have offered an opportunity for them to perform better.

“I think that if the viva was F2F we would probably have more time to discuss my work, with more questions and more discussion in depth. I am not sure if my work was fully read and analysed by the examiner. I think that time for answering the questions was very short and the experience was not good as I expected” (Student 7).

A few students mentioned that the test seemed to be over very quickly, and based on the questions they were not satisfied that the examiners had fully appreciated all their work. But most focus on barriers was technical—with a good internet connection a common challenge.

“I had problems with low connection, but it was possible to complete the viva”. (Student 7)

However, students were also acutely aware of the benefits. Most interviewees were generally positive about the experience and the majority felt that it was a good opportunity for them to perform, even relative to the face-to-face alternative.

“I do not have a particular preference. Both modalities are fine for me. I feel that there is no difference. However, although I would feel confident in attending either online or F2F events, I think that most students might be more nervous in F2F assessments with the physical presence of the examiner observing the students all the time”. (Student 5)

Some students noted that it might even be an improvement in relation to the physical meeting.

“I definitely prefer an online viva instead of a F2F oral assessment. The reasons are the interaction with examiner is fast and objective. It is possible to attend the event anywhere through the Internet and webcam without any technical experience. I can focus on the answer to the question without looking at the examiner's face and feeling worried.” (Student 6)

In terms of feelings, students picked up on a number of issues around the virtual viva event. Students who felt it was a good experience reflected on the challenge of the general viva, and the need to
focus on their performance as already very challenging. Students were certainly aware of the additional technical challenges they faced in using video for interacting with their University and felt that this was more likely to be the cause of problems than the event format.

“The only problem, that might be a disadvantage for online, is if there are technical problems”. (Student 3)

And having quickly accepted the format potential, students were able to offer advice to others facing the same challenge,

“My recommendations for students are keep calm, feel confident and study the written work before the assessment”. (Student 1)

Students generally noted that “. . . it is normal to feel worried. . .” but also noted that the online format allowed them a feeling of a “. . . less pressure and less formal. . .” space to answer the questions posed by the examiner than the face to face context would allow. The issue of confidence was picked up by most interviewees, who noted that they perhaps “. . . felt more confident answering questions through web conference than face to face. . .”, because they were more focused on replying to the question than paying attention to the examiner’s reaction. In some senses they felt that the physical presence of the examiner is somehow more distracting than the virtual presence, and would reduce their confidence.

Students commended on the assessment’s practicality, particularly in terms of location (that they could participate in the meeting from home, at a learning centre or somewhere else convenient—some interviewees had attended the FM at an internet café close to their home). Students also mentioned flexibility, noting that in case of problems, the exam event could be quickly booked soon again. One student noted that this method seemed to be very efficient—providing them with a very fast way to complete the exam and obtain feedback.

The institutional view

Examiners were also aware of the objectives of the FM e-assessment as a quality control mechanism essential as a requirement of the Brazil Government for Distance Education postgraduate course. Examiners were also committed to run the e-Exam successfully, by:

- Testing webcam and audio.
- Allowing seven to fifteen minutes for students to talk about the content.
- Contacting the technical support in case of problems with audio.

Some of them tested the system. All of them mentioned that they did not receive any formal training in this new medium. Most of them conducted their side of the exam at the University Centre. Some of them attended the exams from their homes or other working places.

Indeed, there were some problems noted by the examiners, in particular the internet unreliability in parts of Brazil. In addition, there were concerns raised about changing dates with very short notice. Updating the system was very easy, but it was inconvenient for the examiners. Other concerns were related to conducting the online oral exam in a noisy place, such as “LAN houses” where sometimes it was not easy to hear the student over the background noise, but even in these cases the exams were completed without any serious problems. Indeed, their experience was generally very positive:

“The online viva was a successful experience in UNISUL—LFG. Online assessments are objective, with good outcome in a short time; therefore they are very productive time for both examiners and students.” (Examiner 1)
The internet connection was seen as challenging, but not a significant barrier to the overall process:

“The technology and requirements are simple, it is not necessary to have technical support for most of the events—the participants' autonomy is therefore high.” (Examiner 1)

The technology was seen as very positive with respect to supporting an efficient and reliable e-Viva process:

“Even with technical problems (which were very few and most of them related to low internet connection), it is possible to assess students very fast. It is a safe system because it is possible to check identity and had simple technical requirements. It is very suitable for Distance Education Institutions.” (Examiner 2)

Overall, the examiners focused on a very few general issues (a) that the event offered a significant cost saving with respect to transport, time and location; (b) that it was very flexible, as the exam can be provided anywhere—any time; (c) that it offered a very reliable and fast way to run the exam (in parallel) and (d) to offer almost instant feedback.

**Discussions and recommendations**

The literature presents a few studies on proctored testing. Some of these studies show that an on-line course with proctored testing was more effective in promoting learning when compared to an on-line course with un-proctored testing (Wellman, 2005; Picciano, 2002). Various reasons were identified from the students' perception: “face validity”, reinforcement of examination process and clarification of questions. However, in these studies, the exams still occur in the same place for all students and assessors. This is not feasible for MOOCs or online assessments in countries with a vast territory such as Brazil. A key factor for large scale assessment programmes is the testing infrastructure, which includes: test development, delivery, financial services, registration and scheduling and information management. The infrastructure must be reliable and scalable, so that as the number of tests delivered increases the system is able to support this growth (Wynne & Lopes, 2006).

In this work, we focused on in-depth research on the use of FM in online courses at scale for postgraduate certification in Law in Brazil. We have argued that the use of an effective web videoconferencing for proctoring online oral exams provides high quality assurance. Findings in this study highlighted various benefits for Institutions, examiners and students such as: reliable examination, credible technology, authentic assessment, interactive e-Viva, low cost, scalable process and practical testing in terms of time, effort and money.

This study presents some recommendations drawn on quantitative and qualitative data for students, assessors and Institutions for effective use of web videoconferencing in online courses at scale:

1. **Institution:**
   - Selecting an easy-to-use technology for online exams that does not require training and allows recording of the event as a way to keep evidence of the exam.
   - Providing clear instructions about the exams to students related to both written and oral exams: purpose, requirements, recommended venues (e.g. quiet and good web connection) and criteria for approval (in order to confirm identity and authorship)
   - Clarifying the minimum requirements for assessors related to quality assurance (e.g. successful interaction with audio, webcam and/or chat), minimum and maximum time, flexibility for choosing best format of the oral exam based on the circumstances (e.g. long or short time after delays or technical problems).
2. Students:

- Being aware of the overall requirements and recommendations provided by institution as well as other factors that influence the exam: punctuality, minimum equipment (computer, webcam and audio), good web connection
- Addressing questions with objective answers and being prepared to interact in a short time in case of any initial problem (e.g. 10 minutes)
- Being prepared to interact online by feeling calm and confident to demonstrate knowledge and focusing on questions not on the examiner’s physical reaction.

3. Examiners:

- Being able to select the most suitable format of online exams (e.g. Short e-Viva with tests, interactive e-Vivas without tests, long e-Vivas with presentations, . . .)
- Being prepared to interact not only through audio but also chat (e.g. copying/pasting questions to the chat in case of any technical problem)
- Providing clear questions and instant feedback, and interrupting if necessary (FM option to stop and reinitiate the broadcasting) to keep the exam very objective and efficient.

Limitations and future work

To improve external validity, this research should be extended to multi-case studies at scale with participants of different nationalities. The FM technology has already been used in various countries in the last decade including multicultural and global projects, but all studies at small-scale: reflective learning (Wodehouse & al., 2007), peer-to-peer learning (Scott, Castañeda, Quick & Linney, 2009) and real-time language assessment (Hopkins, 2011).

In this naturalistic study in Brazil, the quantitative analysis of a large metadata set of FM events related to four years allowed us to identify common patterns of different formats of online exams. The full audio recording of a representative set of events related to each format allowed us to develop qualitative analysis in depth as well as prepare further surveys and interviews with respective examiners and students.

Our next work focuses on the use of FM in the European project ENGAGE, which offers MOOCs as a strategy for teachers' continual professional development. ENGAGE includes fourteen Institutions in thirteen countries. Its purpose is to equip the next generation of students and teachers for active engagement in science through a more inquiry-based methodology and responsibility to come to informed decisions by reaching more than 12,000 teachers in Europe and 360,000 students. This research in progress investigates barriers and recommendations to foster teacher’s communities of practice through Open Educational Resources (engagingscience.eu) integrated to MOOC (engage.exactls.com). The FM web videoconferencing application will be used in various ways for learning and assessment.

Conclusion

This study demonstrated that even in a challenging distributed learning context such as the one in Brazil, with low internet connectivity in widely distributed and isolated settlements, online video-conferencing technology was used effectively as a quality assurance mechanism in a scaled, low cost and flexible way.

Findings in this study indicated that the main benefit was the high quality provided by these examinations with FM as a cost-effective alternative to F2F viva. Both examiners and students found e-Viva a reliable method for verifying student's competence in writing their dissertation and
knowledge authorship on the field. Examiners were confidently able to rule on a student’s identity, knowledge, and ownership of submitted work in a short time. The average assessment length was seven minutes of remote video interaction. The majority of students interviewed and surveyed indicated various benefits of the online exam through FM: they were more focused on the questions instead of the physical presence of the assessor; they liked the flexibility related to location for assessment and found the technology easy to use.

With regard to challenges, the key barrier was low connection in certain areas selected by students. This was pointed out by both examiners and students. However, all of these cases were solved by rebooking the online exam in a different venue.

This large-scale study has clearly demonstrated the advantages of a well-designed use of the e-Viva at scale to complement a distance study programme, as well as provided some key recommendations for institutions, examiners and students. This event design did not require any significant investment in human proctoring. Student identity was easily checked via video which was recorded, and ‘cheating’ was very unlikely in this context, so the exam was both demonstrably of good quality and well standardized. Our next work will focus on a multicultural context of FM applied to assessment in multilingual MOOCs.

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Critical Discourse Analysis of Moderated Discussion Board of
Virtual University of Pakistan

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Abstract
The paper critically evaluated the discursive practices on the Moderated Discussion Board (MDB) of Virtual University of Pakistan (VUP). The paramount objective of the study was to conduct a critical discourse analysis (CDA) of the MDB on the Learning Management System (LMS) of VUP. For this purpose, the academic power relations of the students and instructors were evaluated by analyzing whose discourse was dominant in communication with each other on MDB. The researcher devised a model based on the blended theoretical framework of Norman Fairclough and Teun van Dijk to critically analyze the linguistics, ideological, semiotic and socio cognitive-cultural undercurrents in the production and reception processes of MDB discourse. The primary data of the MDB of English Comprehension (ENG101) course was randomly selected to be qualitatively analyzed for this research study. The findings demonstrated that the learners were at a disadvantage because of their lack of command of the English language. However, quick and pertinent replies from instructors revealed students’ empowerment in an educational discursive practice. The results indicated a balance of power relations amongst instructors, students and the University. However, the need to improve the critical thinking of the students to further empower them was strongly felt.

Keywords: Critical Discourse Analysis (CDA); Virtual Classroom; Moderated Discussion Board (MDB); Learning Management System (LMS), E-learning

Introduction

There is no progress . . . in how we teach, despite what might be possible with the new technology. (Laurillard, 2002)

Technology has brought a shift in traditional pedagogy. Information and communication technologies (ICTs) have revolutionized the concept of a traditional classroom. Terms like electronic learning or virtual learning do not sound strange to people now. Access to the Internet is increasing day by day so much that even mobile phones are now commonly used as web navigators, even in the third world countries. The Internet is no more used only for search-navigation; rather it has popularized a/synchronous social networking which has become a part of Virtual Learning Environments (VLEs) too (Annetta, Cheng & Holmes, 2010). Online or electronic learning refers to the process that involves learning and teaching via the Internet and information and communication technologies. Online learning environments are used not only to access learning materials and required information, but also for interaction and collaboration with fellow students and teachers (White, 2003). As interaction is a necessary part of learning, it becomes the defining component of any educational process because it helps students construct into knowledge the information passed on to them from others through scaffolding. Interaction, according to Fowler and Mayes (1999), takes place with concepts, tasks and people. Interaction with concepts results in conceptualizing as a result of learner’s pre-existing knowledge and an exposure to new ideas. Interaction with tasks results in construction by applying the conceptualization to meaningful tasks. Interaction with people results in dialogue by creating and testing the conceptualizations through conversation with teachers and fellow students.
Discussion boards are all about such interaction. This interaction formulates discourse which takes written shape on discussion boards.

E-learning technologies have developed to the extent that quality teacher–student activities can be supported either among groups or individually, and in either real time (synchronously) or in delayed time (asynchronously). Synchronous e-learning examples are video conferencing and electronic white boards, which need simultaneous presence of both students and teachers to be present at the time of content delivery. Asynchronous e-learning refers to the learning that takes place through programs and discussion boards that allow students to work through the screens at their own pace and time. Most of the courses available on the Internet are based on an asynchronous model (Greenagel, 2002). All discussion forums like chat boards, etc. are an example of this. Students can be involved in e-learning discussions from various locations, or from the same place and work in groups like in a real time classroom for assignment preparation etc. (Gunasekaran, McNeil & Shaul, 2002). Six possible forms of interaction within e-learning in general and discussion boards in particular are teacher-student, student-student, student-content, teacher-content, teacher-teacher and content-content interaction (Anderson, 2008). Therefore, the discourse is not only shaped by the linguistic exchanges amongst humans, but technological medium also plays an integral role in this regard.

Discourse is a loaded and fluid concept but is always expressed in the form of language, be it oral or written or any other sign system, e.g., paralanguage, visuals, etc. Michel Foucault alludes to the social control over the production and distribution of discourses (Foucault, 1980). James Gee divides discourse into two categories: ‘discourse’ with a small ‘d’ referring to ‘language in use’, and ‘Discourse’ with a capital ‘D’ which is a more comprehensive concept adding the social context, based not only on language but thoughts, feelings, ways of behavior, values, customs, etc., too (Gee, 2007). Discourses are generated out of discursive practices which refer to the rules of the formation of discourses i.e., what to be said where and how, what should be left unsaid, who can speak with authority and who must listen (Foucault, 1980). Discourses are very much a part of educational systems too. Within institutions there can be power/knowledge relationships and dominated discourses exist in the form of established systems (McLaren, 2003). To explore how educational discourses can be rampant with power is the task of critical discourse analysis.

Critical discourse analysis (CDA) is a long-standing but still developing methodological area that studies how power, knowledge, ideologies and social relations are constructed and maintained in a society through the use of verbal and non-verbal language i.e., all signs of communication. CDA looks at the ‘context of language use to be crucial to discourse’ (Wodak, 2001), and language as a form of social practice (Fairclough & Wodak, 1997). It has a particular interest in the association of language to marginalization, oppression, emancipation, and power. It investigates power relations between the oppressor and the oppressed in all walks of life through the discourses they produce. The roots of critical discourse analysis can be traced back to critical theory as propagated by Frankfurt School. The first generation theorists of Frankfurt School, like Max Horkheimer and Theodore Adorno, the enlightenment figures, propagated that any critique should be based on objective reason and contemplation (Horkheimer & Adorno, 2002). Jurgen Habermas considers language a means of social domination due to its potential for legitimizing organized power relations as found in the society (Habermas, 1990). For Habermas, discourse is a blend of social realities and the use of language as a tool for propagating power. The ‘critical’ of CDA, that differentiates it from any discourse analysis, is all about exploring inequality in power relations in a society manipulated through language and to challenge the oppressors to emancipate the oppressed.

As education is a social process, and nowadays the concept of education goes beyond institutions of brick and mortar, CDA can be used as a tool for critical e-learning as it has the potential to enable
students to explore the intersection of literacy, discourse and politics (Chege, 2009) and struggle against social and political injustices in the field of education and to work for emancipation. E-learning can be a useful tool towards eradication of inequality by providing access to students without any distinction of race, class, economic status and even geographical location. CDA can be very effective in evaluating the discourse produced by students and instructors on discussion boards to dig out the covert messages and agendas underlying their choice of words or nonverbal signs. CDA also helps to critically look at the technological determinism, i.e., shaping of culture and ideologies through dominant technologies in general and in pedagogic practices in particular.

With the aim to critically analyze a discussion board discourse, this case study was conducted on the graduate students of Virtual University of Pakistan. To meet the objectives of the study, Moderated Discussion Board discussions were selected for critical discourse analysis. The MDB is a section of LMS Interface which facilitates the learners to ask queries regarding any difficulties in course content or conceptual barriers. Although CDA has come forward as a major multidisciplinary approach over the past two decades to the study of contexts and texts and some work has also been done about the social networking discussions, not much attention has been paid to academic electronic discussion boards discourse. Much attention needs to be paid to this area to identify the ideologies of either side, as students and teachers are the backbone of any society. Therefore, the MDB of VUP has been analyzed both for its written texts and visual semiotics. Keeping in view the parameters of critical discourse analysis the study explores the nature of power relations, inequality, biases and the ideologies behind them, whether explicit or implicit in the MDB discourse.

**Research Questions**

The critical discourse analysis of MDB aims to look for the answers of the following research questions:

1. What is the nature of power relations, if any, on MDB? Is the MDB discourse intimidating or non-intimidating, friendly or biased?
2. Does the MDB discourse reveal any implicit or explicit ideologies?
3. Does the MDB discourse transmit or promote stereotypical views that reinforce sexist and patriarchal attitudes, class distinctions and socio-economic inequalities?
4. Does the University reproduce the social relationships and attitudes to sustain the existing economic, class or gender relations of the larger society?
5. Does MDB discourse succeed in developing critical thinking in students resulting in some sort of empowerment?

**Literature Review**

Language—whether spoken or written—is a powerful tool of communication. Electronic discussion boards exploit the written form of language for communication. The characteristics of electronic discourse, both a/synchronous with particular reference to language use, have attracted critical discourse analysts who have focused on netspeak neologisms, prefixes, compounds, abbreviations as well as the affective use of expressions resulting in discourse conventions (Montero, Watts & Garcia-Carbonell, 2007). The research in the field of second language acquisition through e-learning modes also emphasizes the importance of interactive discussion forums’ discourse because of the interactive methodology used, resulting in quick language learning as it helps in assessing the learning process of students (Garcia-Carbonell, Rising, Montero & Watts, 2001) and helps compare face to face and online interactive learning. However, little has been published on the power relations
amongst online students, instructors and the institutions. As asynchronous online discussion forums are not oral and mostly written; the comparison cannot be easily drawn. However, they have their own informal ways of communication which has been called ‘second orality’ by Ong (Wilson, 2001). This informality due to digitization becomes a subject of critical discourse analysis. The works of Fairclough highlight such “mixtures of formal and informal styles, technical and non-technical vocabularies”, which are “markers of authority and familiarity” (Fairclough, 1995, p. 79), and result in the processes of ‘informalization’ or ‘conversationalization’ and technologization of discourse. According to Kern (1995), asynchronous discourse can be considered an informal hybrid of oral and written communication and acts as a bridge between written and spoken skills for learners.

Critical discourse analysis is used to examine texts critically to ransack traces of power, dominance, inequality and bias. This analysis is based on the exploration of the maintenance and reproduction of discursive practices in specific socio-political and historical contexts (van Dijk, 1998). This exploration is systematic and dissects opaque discursive relationships of causality and determination in socio-cultural textual processes (Fairclough, 1993). Fairclough offers a three-part framework for critically analyzing a communicative act i.e., text (micro), discourse (meso) and sociocultural (macro) interpretation (Fairclough, 1995). Fairclough views text from multifunctional points of view analyzing its functions as representations, relations and identities. Discourse practices are the processes through which a text gets its final shape, be it production process or changes brought by consumption (Figure 1).

![Figure 1: Discourse as text, interaction and context (after Fairclough, 1989; Thompson, 2005)](image)

In text and discourse analysis, Fairclough pays special heed to intertextuality, which develops a borderline between text and discourse (Fairclough, 1995). Intertextual analysis is different from linguistic one as it is more interpretative in comparison to the descriptive nature of the text. Intertextuality is the text’s overlapping whether manifest or constitutive (Fairclough, 1992). The sociocultural critical discourse analysis of Fairclough refers to the dissemination of economic, political or cultural sediments in any discursive event either singly or altogether.

Van Dijk is one of the most important CDA practitioners as far as media discourse is concerned because he has the credit to integrate general discourse principles to media texts by focusing on the analysis of production and reception processes. His production process refers to the journalistic
and institutional processes for meaning making based on their economic interests and social agendas. Reception processes include the understanding, retention and reproduction of news (in our case MDB question answers). His structure, production and comprehension model works on the micro and macrostructure levels. Microstructure focuses on semantic and rhetoric levels and macrostructure on overall thematic schemata (van Dijk, 1993, 1998). His superstructure schemata include the headline, story and consequence analysis (van Dijk, 1998), whereas his ideology analysis caters social, cognitive and discourse analysis including non-verbal semiotic clues (van Dijk, 1995a).

The recent study focuses on the CDA of a virtual classroom discussion board. The study of computer-mediated discourse has become quite a concern in our times. The interaction in a virtual classroom can be a complicated phenomenon to be investigated because of the diversity of students in terms of age, locality, culture, etc. However, this very diversity calls for CDA of online discourse. One can explore the presence of social clues in students’ online discourse by looking at the cognitive and metacognitive components of the messages (Hara, Bonk & Angeli, 2000).

The need of cognitive presence in online learning is important because only interaction is not enough and the design, structure and the leadership in form of the instructor can have a deep impact on students’ learning (Garrison & Cleveland-Innes, 2005). The role of the instructor remains very significant in discussion board discursive practices. The teachers can not only inspire students for meaningful learning through discussions (Bender, 2003), they can also move beyond their roles as ‘sage on stage’ or ‘guide on the side’ to ‘the ghost in the wings’ to enhance critical thinking (Mazzolini & Maddison, 2003). The teacher-student and student-student interaction results in a sense of community (Poole, 2000). However, interactivity should be based on an inquiry model (Swan, 2001). Dahlberg (2001) compares Habermas’ requirements of public sphere with online discourse. He states the need of developing deliberate spaces on the Internet to expand public sphere for public deliberations.

Patient Rambe (2012) explores the relationship between students, teachers and university administration by employing CDA on the discourse generated by their interaction on Facebook. As Facebook is a social networking site, it provides an interactional space even for academic purposes, and Rambe explores the relational power and social learning underneath the discourses. His findings affirm the existence of authoritative discourse. The same sort of power relations can be explored in academic discussion boards by exploring the nature of social presence (Swan & Shih, 2005). Whereas Rambe refers to students’ imagined powerlessness on discussion boards (Rambe, 2012), Becker, Greer and Hughes (1995) explore the need to study students’ personal views of their experiences in online discussion boards to find out the outcomes of student behavior the academicians can be interested in. “If we do not see it as they do, we will not understand what they do” (p. 2). According to Swales (1990), the key purpose of a discourse community is to share information clashes, if there are any, with some of these purposes, as many of the learners rely on discussion boards for information sharing rather than stimulating support. Discussion boards can stimulate learning if the students feel powerful, but if they feel powerless the learning may get affected due to affective barriers in communication. The affective barrier can be a result of manipulative discourse. Discourse becomes manipulative when the intentions of the writer are not obvious to the reader and they fail to understand the real intentions of the manipulator (van Dijk, 2006). All the same, this is frequently the case, particularly when the respondents don’t have the specific knowledge that might be applied to resist manipulation (Wodak, 1987). In Pakistani scenario, the learners of English language do not have a command on English language and they are very much dependent on their instructors in their interactions. The barrier of language can make it difficult for them to understand manipulations, if any.
It has been observed that students rarely engage in the communication processes (in face to face learning in general and online learning in particular) that comprise critical discourse, and even if they try to do so very rarely, they fail to achieve the desired results (Veerman, Andriessen, & Kanselaar, 2000). After its introduction to virtual mode of educational settings in 1980s, there have been permanent questions about the most excellent way to use this communication technology for education. Becker et al. (1995) recommend that “an understanding of the students’ experiences would provide insight into the lack of online critical discourse that is widely documented throughout the literature.” The social and emotional presence of the students as real people in academic discussion boards is not ample (Garrison & Anderson, 2003). The use of detailed signatures can provide students a sense of identity and the use of emoticons a more human atmosphere. The cognition of teaching presence is also at serious risk if the students are not familiar with the teacher identity and vice versa. Interestingly, both teachers and students are more familiar with the technology used than the human beings on the other end.

Papacharissi (2004) highlights the dire need of creating democracy through online discourse for increasing political participation which can eventually lead to a democratic utopia. The discourse must remain civil even in heated discussions. He refers to Lyotard’s vision of democratic emancipation achieved through disagreement and even anarchy where required. Similarly, the academic discussion boards online can level all inequalities if students raise their voice for their rights.

**Method**

For this qualitative study, primary data from Virtual University of Pakistan Moderated Discussion Board was utilized. The MDB text was investigated by applying the critical discourse analysis method. For this purpose, only one of the English courses was selected i.e. *English Comprehension* (Eng 101), which is a basic English language skills improvement course. Out of many postings on Spring and Fall 2014 MDB, only five were randomly selected for convenience of analysis and to avoid repetition. Moreover, the interface screenshots (Figures 3 to 7) have been pasted as they are, without hiding identities because gender bias was a part of the analysis. Keeping in mind the ethical issues, the permission was sought from the respective instructors whose name was to be revealed. The interpretation has been drawn in the form of tables.

Based on Fairclough and van Dijk’s ideas on CDA, a new model was formed by the researcher as a rubric for the CDA of the MDB (Figure 2).

Virtual University MDB is a text itself with the context of e-learning i.e., technology as a medium of communication, thus each MDB becomes a communicative event (Fairclough approach) which definitely has social context in terms of academic power relations among student, teacher and institution. Each MDB has a superstructure (van Dijk approach) with its address, text, semantic, structural and semiotic features. Thus the Virtual University MDB forum can be seen as a “system of mental representations and processes of group members” (van Dijk, 1995b, p. 18). Through the given model (Figure 2), it will be analyzed whether VU MDB discourse can control or shape thinking of the students/instructors resulting in some sort of ideology formation, changing the previous ideologies.

Based on Fairclough’s first dimension out of his three dimensional framework for CDA, the researcher analyzed the *linguistic elements* of the MDB discourse by looking at the semantic and lexico-grammatical aspects of the text which have mutual impact on each other (Fairclough, 1995). The coherence, direct or indirect modes of asking or replying, the thematic structure with the topic, main argument, premises etc were also analyzed. Fairclough considers linguistic analysis to be descriptive in nature whereas the interpretive task is that of intertextuality (Fairclough, 1995). Therefore, the researcher also looked for intertextual clues in the MDB discourse.
Based on van Dijk’s concept of production process and Fairclough’s institutional process, the researcher explored the institutional process of MDB development by focusing on its purpose, process of asking and answering questions. The rationale of the production of questions from students and replies by instructors was also analyzed.

By reception process van Dijk means how news are received, understood, retained in memory and finally reproduced by the masses. The researcher looked at how a question was received/perceived by the instructor and the reply by the students respectively, analyzing attitude, comprehension, memorization and reproduction, if any. The researcher also tried to analyze, based on Fairclough’s reception studies, the process of meaning making and the role of the University in the production of discourse.

The ideational process was analyzed tracing any ideologies either explicit or implicit in the MDB text on both ends. According to Fairclough, every text represents and recontextualises some social practice. This he calls the ideational function of text because text carries certain ideologies. Text constructs the identities of writers and readers based on status, role and individual aspects of identity leading to a construction of relationship between writer and reader (Fairclough, 1995). The researcher looked at all these aspects of student-teacher ideologies and identities. Whether any ideology was present or not was also taken into consideration.

As MDB communicative act takes place through written communication, the semiotic analysis explored the spaces, presentation of texts and visuals of the MDB interface to analyze the innate

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**Figure 2: Model for Analyzing MDB Discourse**
ideologies, if any, of the students and Instructors. Van Dijk considers discourse analysis as ideology analysis itself as ideologies are not only expressed in verbal discourse but also in nonverbal semiotic clues (van Dijk 1998). The researcher analyzed all semiotic signs for tracing instructor-student power relations. The proxemics i.e. the use of space on the MDB was given special attention along with paralanguage expressions if any.

Van Dijk blends social cognition and personal cognition and calls it sociocognition (van Dijk, 1995a). For him, ideologies are socially constructed and become a mental system based on shared attitudes of individuals. Thus the personal cognition of any individual is directly affected. The researcher analyzed the context of discourse in this section by analysing power relations and/or any conflicts involved. Fairclough calls it sociocultural aspect and pays heed to the presence or absence of values, the third dimension of his CDA framework. How are the socially dominant roles manifested in MDB discourse also remained a subject of study.

The CDA model works in a hermeneutics way i.e., every parts of the discourse should be interpreted in relation to its whole but the whole must be understood in the context of its constitutive parts. The linguistic aspect is directly linked to production which triggers reception and connects the linguistic aspect to ideational, semiotic and finally the socio-cultural cognitive aspects. Thus overall, the academic power relations will be critically analyzed following the model given above.

**Results**

Five MDB posts were analyzed in a table form according to the model devised by the researcher (Figure 2). Each MDB screenshot (Figures 3 to 7) is followed by a table of analysis (Tables 1 to 5).
Table 1: Analysis of MDB Discourse 1

| Linguistic Analysis | The student has tried to follow a proper format for his question by placing a proper address, salutation and question body. This shows his/her attempt to be formal. However, the use of words like “i”, “u’ shows student’s comfort with chat language. Student’s comfort with chat language shows the dominance of technological innovations over language in particular and society in general, as it is an unconscious expression on part of the student rather being a conscious informality in his/her expression. Therefore, technological determinism is present. The instructor’s reply is formal but she fails to use standard English constructions herself e.g., “it might happened” instead of “it might have happened”. The instructor seems to be replying in a hurry or flow and is negligent that a wrong expression can hinder the accurate second language learning of the student. |
| Production/Reception Processes | The production of discourse at the end of the student is based on genuine need i.e., missing paragraphs in handouts. As a result the student fails to relate handouts to video lectures. The student seems to be keenly following the video lectures as well as studying handouts. The reception on the end of the Instructor is quite positive. The template is provided by the VUP with an aim to facilitate students for asking any lecture-related questions. Certain checks and balances are University policy to avoid deviances. This is why, it is called the moderated discussion board as the instructor has the option to block any offensive messages. The instructor is supposed to comprehend, research and then reply to the questions. The instructor has the facility to edit his/her response before posting the reply. The student also has the same facility, but once his/her answer is posted, it cannot be edited. Like most chatrooms/discussion boards the admin i.e., institution is in a powerful position because of the formal procedures. |
| Ideational Processes | The student considers it his/her right to be facilitated and the instructor is ready to facilitate. The student, however, does not have the formal facility to post his/her name, so his roll number remains his identity. The instructor on the other hand posts with her name. The feeling of a ‘nobody’ may exist on the end of the student. |
| Semiotic Analysis | This MDB mainly contains linguistic elements. The nonverbal clue is the use of space only that shows student’s organized and confident stance. The visuals have a decent organizational look as the use of blue color is common in educational templates. The combination of blue white and gray has an unassuming look and does not have an intimidating effect. |
| Socio-Cognitive Analysis & Power Relations Between Student/Instructor/University | The Instructor has the power to answer, but the student has the power to ask and if the student is not satisfied s/he can ask again and again. The student seems satisfied with the answer as no query in continuation has been posted. The instructor has the power to block, if any abusive material is sent. Overall the student is less shy to be expressive because of the distant and non face to face mode. Also the facility of availing as much time as s/he wants to write and edit the question makes the students more powerful. The instructors are supposed to reply as early as possible as per University guidelines. However, in the triad of the three the Institution remains the most powerful as the policy maker. |
Table 2: Analysis of MDB Discourse 2

| Linguistic Analysis | The language of the student is full of errors, spellings e.g., “pleas” as well as grammatical e.g., “tells”. There are punctuation mistakes of capitalization e.g., “i” and missing commas. His skills in English language need a lot of improvement. However, the question has been posed in a formal order with a salutation, body and closing. Considering the need of improvement, the instructor has given an elaborate reply to the student. |
| Production/Reception Process | The reply is by a male Instructor “Mr Asif” but the student’s address to “mam” is interesting. As the video lectures of Eng 101 have been delivered by Dr Surraya Shafi Mir, the student thinks s/he’ll be on the answering end. The student is not well informed about the processes of the virtual system of the university s/he is enrolled in, which weakens his/her position. The sense of humour is missing in the answer and the reply is formal. The impact on student will be that of a highly formal atmosphere. |
| Ideational Processes | The use of the word ‘slam’ shows the Muslim identity of the student and his/her preference to use Islamic way of salutation. However, the instructor, as per university policy, has replied without any salutation to avoid controversies. The student does not use signature, which reveals that s/he is not assertive about his/her personal identity and is satisfied with the roll number identity. |
Semiotic Analysis

This post mainly contains linguistic signs. The nonverbal clue is the use of space only that shows student’s organized and confident stance. However, the instructor uses ample space which can be interpreted as his facilitating attitude towards the student, but also implies that he is the authoritative source of information. The MDB template does not support the use of emoticons which can render a friendly effect to the discourse.

Socio-Cognitive Analysis & Power Relations Between Student/Instructor/University

The instructor’s detailed reply shows a very responsible and caring attitude and makes the student appear powerful in the sense that s/he is getting his/her rights as far as knowledge seeking is concerned. This is obvious as the student does not ask another question. The University policy of facilitating students as much as possible is also obvious.

Figure 5: MDB Discourse 3
## Table 3: Analysis of MDB Discourse 3

| Linguistic Analysis | The student has written “Question #1” as the subject. He is not clear about what to write as a subject. The student’s English language skills need a lot of improvement as there is no coherence in use. The first person pronoun ‘I’ has been used once as a small letter and once as capital. A question mark is not put after “how are you” nor the ‘h’ of ‘how’ has been capitalized. However, chat language has not been used. The instructor’s reply is different in comparison to the previous two MDB posts. He puts a salutation and closing remark ‘take care’. This instructor maintains his individuality and his reply seems more encouraging and intimate in a distance e-learning environment. However, the instructor’s reply is closer to the spoken English informal style. |
| Production/Reception Processes | The student’s need to ask the question arises out of his lack of command of the English language and the communication gap s/he experiences as a result. The lectures of ENG 101 are delivered in English language altogether and the student is requesting for a bilingual mode. The friendly tone of the instructor shows a positive reception end. He politely guides the student to use dictionary instead. The friendly tone can have a very encouraging impact on the student which can result in better learning. Although the instructor is bound by the limitations of the MDB interface, he made better use of space by adding salutation and concluding friendly remark. It seems that the University does not bind them to follow a particular format for replying and instructors do have their academic space. If the emoticons were a part of the MDB interface, it seems that this Instructor must have used them to keep the academic discussion’s impact more comfortable. |
| Ideational Processes | The use of the word ‘salam’ (here with different spellings in comparison to previous ‘slam’ of second MDB) shows the Muslim identity of the student and his/her preference to use Islamic way of salutation. However, the instructor replies with the address “Dear Student” to avoid showing any ideological tilt. |
| Semiotic Analysis | The nonverbal clue is the use of space only that shows student’s organized and confident stance. However, the instructor uses more space here which can be interpreted as his facilitating attitude towards the student but also implies that he is the authoritative source of information. |
| Socio-Cognitive Analysis & Power Relations Between Student/Instructor/University | The question asked by the student is very interesting. He has a problem with English medium of instruction and wants to be taught in a bilingual mode. The instructor seems helpless as he has not taught the course himself, and may not be involved in the policy making of teaching English courses. His answer is that an English course is supposed to be taught in English language. This can either be his personal ideology or University policy. This question addresses a dilemma most of the students and teachers seem caught in Pakistan. What is the policy of English teaching? The question unfolds a lot of power relations hidden underneath be it student-instructor-university or cultural imperialism of the English language. Why teach English in English language remains the debate. The student may not be satisfied with the answer and the instructor does not even know whether he is confident of his answer and can justify it, if further investigated. However, the answer can shape the ideology of the student that ‘English is taught in English language.’ |
The student has written “Question #1” as the subject. He is not clear about what to write as a subject. The question has been asked in Roman Urdu. The student’s English writing skills are either not good or he is not comfortable as he writes a phrase in English at the end ‘kindly guide me’ and ‘with best wishes’. The instructor is not at all indifferent. He guides the student properly with proper address and ‘take care’ at the end. The tone is intimate. English language seems to be a barrier in communication for the student but he breaks the barrier and asks the question in Urdu language. Certain checks and balances are university policy to avoid deviances. However, the Instructor does not discourage the student from asking questions in Roman Urdu. On the one hand, the students is facilitated as much as possible; on the other hand no university policy is highlighted here. The use of national language has not been discouraged.

English language seems to be a barrier in communication for the student but he breaks the barrier and asks the question in Urdu language. Certain checks and balances are university policy to avoid deviances. However, the Instructor does not discourage the student from asking questions in Roman Urdu. On the one hand, the students is facilitated as much as possible; on the other hand no university policy is highlighted here. The use of national language has not been discouraged.

The instructor has the facility to edit his/her response before posting the reply. The student also has the same facility, but once his/her answer is posted, it cannot be edited. Like most chatrooms/discussion boards the admin is in a powerful position.

The student uses his full name/signature along with the roll number, so he is conscious about his identity. His use of Urdu language also asserts his rootedness in his local identity. The instructor does not discourage the use of Urdu language. Either the university policy is bypassed or the instructor seems to be in a powerful position of maintaining his ideology.
Semiotic Analysis

The nonverbal clue is the use of space and visuals only. Student's balanced use of space shows his organized and confident stance.

Socio-Cognitive Analysis & Power Relations Between Student/Instructor/University

The question asked by the student is very interesting. He is conscious about his marks and will only participate in discussion board if it is graded. The instructor’s reply establishes the fact that the students have certain facilities and they are quite empowered to make use of those facilities. They are not misguided.

Figure 7: MDB Discourse 5

Table 5: Analysis of MDB Discourse 5

| Linguistic Analysis | The language of the student is a combination of formal and informal language. She has written a proper subject that gives the instructor clear idea about the question. The question is a proper statement, but the first letter of ‘respected’ is not capital. The use of ‘u’ instead of ‘you’ shows chat language dominance. The use of b/w instead of between shows an informal style. The instructor’s reply is detailed and comprehensive. |
| Production & Reception Processes | The student produces question based on cognitive difficulty in understanding difference in certain concepts. The reception at the end of the Instructor is positive and results in the production of a comprehensive reply. The reply is received positively by the student as no further question is asked. |
| Ideational Processes | The student uses her name/signature at the end of the question so she is conscious about her identity. Her use of ‘AOA’ also shows her religious identity along with an informal chat style. The instructor’s reply is direct and does not formulate any other identity except that of an academic representative. |
Semiotic Analysis
The use of space shows student’s organized and confident stance. The instructor’s reply is very long. If she had used any nonverbal supports the reply might have appeared beautiful and appealed to the visual senses of the student which could help better retention.

Socio-Cognitive
Analysis & Power
Relations Between
Student/Instructor/
University
The question asked by the student is academic and the instructor remains the powerful source of information. The student does not reply back which shows her satisfaction with the answer.

Discussion
Classroom pedagogic discourse includes the norms and processes by which authority is established, exercised and maintained either in the name of discipline or better learning outcomes via media and many other means (Lankshear & Mclaren, 1993). A general notion is that teacher is more powerful and student is not because of the hierarchies of the designated roles. Therefore CDA is important to empower students in educational setups.

The analysis of MDB discourse reveals that any questions posted by students are answered right away and if the student is not satisfied, s/he has the opportunity to ask again and again. Students are more daring to ask questions from their instructors in comparison to face to face educational mode. It is obvious that the MDB discourse is not intimidating or biased for students. Rather, it is friendly. The conversations become successful communicative events which ensure student centricity making MDB a democratic forum. However, the instructor remains the powerful source of information.

Language has the potential to stereotype genders by using marked expressions like ‘mankind’, thus determining the superiority of one gender over another, as in the above example that of men over women. This sort of language that discriminates any gender is called sexist language. Pakistan is a male-dominated society where women are discriminated as an inferior gender. This discrimination enters into colloquial use of language too. However, a very careful analysis of MDB discourse manifests the absence of the use of sexist language. Rather equality and respect for both genders is obvious, for example, in MDB 2 the male instructor uses both pronouns his/her to address the student. ‘His’ as a marked pronoun has not been generalized for both genders.

In general, females in Pakistani society hide their identities on social media and emails etc due to many underlying fears. However, in MDB 5 the female student Madiha confidently uses her signature without any fear. Her use of her name like her male class fellows shows that she is confident of her identity as a female as well as considers herself an individual because the MDB discourse is not intimidating for women. Both male and female students get same sort of replies unlike the face to face universities where women may be treated differently from men either in terms of harassment or more favours. MDB discourse manifests gender equality. It is clear that the discourse does not reproduce socially dominant gender relations either in the use of language or in attitudes.

With reference to implicit or explicit ideologies, religious ideology is explicit as it is obvious through the use of ‘slam’, the Islamic expression for salutations. This ideology, however, is dominant amongst students and the instructors do not display it in their language.

MDB 3 is an interesting example of the presence of implicit ideologies in the discourse. The student being weak in English listening skills requests for a bilingual mode of teaching and the instructor transmits an ideology that English language cannot be taught in Urdu. The ideology can be based on practical teaching experience, but it alludes to linguistic imperialism. The instructor may have inherited this ideology from his English teachers. Linguistic imperialism refers to the
transfer of dominant language either through colonialism or cultural or economic hegemony. English is a mark of superiority in Pakistan. The colonial legacy of the superiority of English language continues even in a postcolonial era. If one’s English is good, one is more successful in society either in terms of social prestige or for job purposes etc. However, here teaching methodology is in question. The instructor suffers from monolingual fallacy i.e., English language can be best taught in English language or subtractive fallacy that if other languages are used in an ELT class the standard of English teaching and learning would drop (Phillipson, 1992). One implicit ideology based on cultural and linguistic imperialism can be traced in the discourse. The student may carry it forward and transmit to others unconsciously as the instructor does. However, the next MDB allays the impression of dominance of English language as the student writes his question in Urdu language and the instructor does not discourage him. Native language is not discouraged by the same instructor who expressed the need to teach English in English language. May be teaching English in English is the University policy following suit of most of ELT practices internationally.

The social context is not explicit on MDB as the demographical details are missing from the interface of MDB. The geographical and age details are also missing. The interface by default does not show student name, thus ensuring neutrality, however, the students have the independence to write their names so gender details as per students preferences are revealed. No gender bias is apparent both on students and instructors end. The technology use makes the receptive end neutral and equitable. The instructors cannot be biased based on cultures or class distinctions as these identities of the students are not revealed by the system. This remains an edge to the students in comparison to face-to face mode as no favoritism based on region, cast and creed takes place. The ‘education for all’ motto removes all biases and creates a unified Pakistani educational community whether local or overseas. The instructors are not biased even about the religious identity of their students and follow a neutral policy. Some students, however, seem ruled by the religious identity in their discourse on MDB. They are neither discouraged nor encouraged, which again shows the absence of any kind of reinforcement of students’ ideologies which may be the shared by the instructor.

VUP is a public sector University; therefore, the MDB does not reflect any economic or political benefits to be enjoyed in the process of production. Rather students are facilitated to the maximum with a neutral attitude from the instructors. The MDB as a “model” (van Dijk, 1995a) does not control students’ thinking or ways of behaving. Their personal and social cognition is not wrapped in any consciously developed hegemonic ideology. However, technology remains the most powerful entity as its influence can be seen in the chat language that the students frequently use. The students seem less colonized by the colonizers’ language and more colonized by the chat language—the neo-colonization of technological determinism. This definitely raises the question: is the spread of technology intimidating in some way? However, it remains emancipatory as the historical, social or political background of the students is simply nonexistent in MDB discourse. Unlike face-to-face classroom interaction, neither a student of influence is facilitated more, nor a student from a backward area or poor background is looked down upon. MDB online learning environment is a great equalizer.

However, there should be more freedom of expression in terms of any oppression the students feel. The moderation of abusive messages should definitely be there, but the ideas to improve the system should be invited rather encouraged from the students end on this very public forum. Moreover, to develop the critical thinking skills of the students, more disagreement should be encouraged so that the MDB even between instructors and students remain threaded. Contrary to face-to-face discussions, online discussion boards involving disagreements to earlier messages can improve criticality (Chen & Chiu, 2008) in thinking, reading and writing. One of the reasons for the concern of the student in MDB4 that the MDB is not graded, is the availability of a Graded Discussion Board.
Board (GDB) where the students discuss a given topic and are graded on that. The non-graded aspect gives an edge to the student as far as power relationship of the triad student-instructor-university is concerned. The student is independent to ask or not to ask, hence not intimidated by the assessment aspect.

In the selected posts on MDB, intertextuality is also lacking. Intertextuality is the reference to other texts (Fairclough, 1992). In case of MDB, it can mean either a reference to another MDB question or to another relevant text. Although in the overall CDA of MDB the instructors do refer to some replies made earlier which may answer the question of the student; data mining, i.e., to reveal the previous data of MDB to the students is not generally used by the instructors. However, the instructors have the facility to access previous data. More frequent cross-referencing to students’ questions can develop an air of intimacy, and valid references to other texts can bring authenticity.

As far as the semiotics of MDB discourse is concerned, the interface has a decent visual impact with its blue color. The interface is balanced which is symbolic of the balanced power relations between students, instructors and the University. However, MDB interface does not show any multimedia files uploading facility. The use of multimedia can make the MDB more vibrant. The use of visuals would also eradicate boredom. Moreover, the use of emoticons can result in a more friendly discourse and decrease the formal air which creates the impact of authoritative discourse. Overall, the VU MDB discourse seems to maintain a balance of power between students and Instructors.

**Conclusion/Implications**

As it is an advantage with online learning environments in comparison to face to face learning, Virtual University of Pakistan empowers her students by providing a non-intimidating and unbiased atmosphere for posing questions. The instructor, in spite of being the powerful source of information, plays the role of a moderator and facilitator and the overall correspondence remains friendly. The student has the power to ask which balances teacher-student power relations.

Implicit or explicit ideologies can easily pave their way into any discourse in general and academic discourse in particular as the teacher is a source of inspiration and rhetoric can work wonderfully with ethos. Although it is very difficult to find an ideology-free discourse, measures can be taken to minimize it. VUP MDB seems to have take care of this aspect. This is why the explicit ideologies are not promoted and implicit ideologies seem to be a result of lack of critical thinking on part of instructor as an individual in some rare instances. The openness of discourse can be one intimidating factor for instructors to hinder themselves from inculcating their ideologies in students. Overall University policy seems to keep quite a check on this sort of discourse development from either student or instructor’s end.

One remarkable achievement of VU MDB discourse is not to reproduce socio-political hierarchies. There is no gender bias or discrimination based on ethnicity or class differences from either end i.e., instructor or the institutional policy. The MDB discourse does not show any explicit ideological propaganda at all from the University or instructor’s end. It is a purely neutral forum for educational purposes. Even the social, political or economic backgrounds of the students are not revealed by their questions and the forum does not reproduce the socio-economic and cultural stratification remaining an upholder of equality and democracy. Education for all irrespective of their backgrounds or affiliations is practically demonstrated.

If we pose a question whether MDB is a democratic forum where everyone has a free and loud voice (Williams & Goldberg, 2005) or not, the answer will be reasonably in affirmative. MDB is a democratic forum where students have the opportunity of a free voice. However, the voice does not
sound loud. This is because in the randomly selected postings, there is no cross-questioning. Either the student is too satisfied by the replies or lacks confidence and knowledge to cross-question. Lack of command on English can be a major reason of not cross questioning apart from a clear cut lack of critical thinking. Providing a democratic voice is good enough but an academic discussion board should work towards developing critical thinking by answers that trigger cross-questioning. This will result in student empowerment. Empowerment does not mean only to help students about their problems, it means to enable them courageous enough to challenge an answer they are not satisfied with (of course with all civility and politeness) which eventually may help them to change the social order (Mclaren, 2003). The MDB discourse seems dialectic, ending in a consensus. Efforts should be done by the University and instructors to make the discourse dialogic by making even two disagreeing voices getting along with each other on the forum.

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An OER online course remixing experience

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Abstract

This paper describes the authors’ experience of remixing two existing OER courses to provide an OER course for a particular purpose and context. The developing country target environment is stated as well as the original resources’ provenance. The motivation for remixing these OER is explored, and the design of the adapted resource is described followed by notes on the implementation and evaluation of the remixed ‘Facilitating Online Learning’ pilot course. Lessons learned include that remixing existing OER courses with similar licenses is an achievable undertaking, and OER will be reused if they are deemed to be contextually relevant. It follows that the content, nature, and deployment environment of the OER is important as is its licensing for reuse. The practical illustration of a simple remix experience is significant, as there is little literature available on remixing OER. Sharing this experience is intended to encourage and inform other such remix projects.

Keywords: Open Educational Resources; online course; remix; developing country; capacity building

Introduction

Mirroring the trend in developed countries, higher education institutions (HEI) in developing countries are facing the challenge of increasing access to higher education (HE) while maintaining the quality of their course provision. Although deploying supporting information and communication technologies (ICTs) is seen as a possible solution to providing wider and scalable access, it is highly likely to raise additional barriers within African HE environments. Wilson and Stacy (2004) reported on serious concerns around the capacity of academic staff to undertake blended or online teaching and learning, and the increasing desire of African universities to make use of ICTs over the past several years raises similar concerns, not to mention the limited institutional ICT infrastructure and considerations around learner access with the developing country context. In a case study from Tanzania, Mtebe and Raisamo (2014) highlight that the majority of academic staff lacked the necessary skills to create and reuse Open Educational Resources (OER).

The increasing integration of ICTs to support teaching and learning resulted in the early recognition by Plomp (1999) of the multiple roles now required of the academic. Plomp (1999, p. 26) reported that

Lecturers will become facilitators and designers of students’ learning environments, and they may take on a variety of roles such as resource person, coordinator, and often co-learner and co-problem solver. This demands a special approach to staff development, which goes beyond the training of basic ICT skills.

While many funded programmes, for example the Partnership for Higher Education in Africa Educational Technology Initiative (PHEA ETI), have undertaken to address concerns in this area
over the past 10 years (PHEA 2008), it remains difficult to propagate efforts in developing capacity throughout the region in a sustainable manner.

Two noteworthy attempts have been made in recent years to address aspects of the challenge of developing academic staff capacity in online teaching and learning within the African HE sector. In each case, the organisations undertook the design, development and publishing of openly licensed resources permitting reuse and adaptation, in order to support and enhance the capacity building of academic staff.

The first of these was initiated by the South African Institute for Distance Education (Saide) who designed and developed a resource in three formats: initially the print-based ‘Supporting Distance Learners: a Tutor’s Guide’ was published in 1998, followed by an online web version in 2009 (Saide, 2009), licensed as an OER under creative commons (CC) (Welch, Drew & Randell, 2010); and in 2010 the OER was transformed into an online course housed within a virtual learning environment (VLE) and renamed ‘Supporting Online Learners’ (Krull & Mallinson, 2013). This latter version is available both as an unmediated (self-study) and a mediated (facilitated) course. This resource aimed to prepare educators for teaching and learning with technology, understanding the facilitator’s role in supporting the learner in the context of open, distance and online learning, activity based learning, and the use of communication tools.

During an overlapping time period, the Centre for Education Technology (CET) at the University of Cape Town (UCT) developed an adapted online course ‘Facilitating Online’ also aimed at African HE institutions. The original Online Facilitation course was designed and developed by Gilly Salmon (Leicester University) and was then adapted by the Centre for Educational Technology (now Centre for Innovation in Teaching and Learning - CILT) at UCT and released under a CC license. It was run online by CET for the first time in 2004, and subsequently the course has been refined and run again online in 2006, 2008, 2012 & 2014. This course is supported by a resource ‘Facilitating Online: A course leader’s guide’ (Carr, Jaffer & Smuts, 2009).

The purpose of these two openly licensed resources was to support the adaptation and transference of facilitation skills from face to face situations to the online environment, and equip facilitators to make informed choices concerning the implementation of online communication and interaction within the design of learning activities.

**Motivation for remixing the resources**

According to Butcher (2011), one of the transformative potentials of OER concerns “the principle of allowing adaption of materials” by both students and educators. This permitted activity is believed to contribute significantly to “creating more effective learning environments” (Butcher, 2011, p. 13). However, finding suitable and relevant OER can be challenging for educators (Mtebe & Raisamo, 2014), and Butcher (2011) acknowledges that it is rare to find an OER that is immediately fit for local use. With hundreds of thousands of CC licensed OER residing in repositories, one is likely to search for a ‘good fit’ initially rather than a perfect fit for immediate use.

Although the above courses may on the surface appear to have a similar purpose, each has a distinctive focus and scope, as outlined in Table 1. The most notable difference is that Course A encompasses a wide range of elements that influence online teaching and learning, includes a focus on technology, and provides grounded activities, examples, and readings; whereas Course B focuses on the more human dimensions of achieving good online facilitation, and is highly experiential and reflective.
Table 1: Courses A and B Outlines

<table>
<thead>
<tr>
<th>Course A: Supporting Online Learners</th>
<th>Course B: Facilitating Online</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Outlines (Units/Weeks)</td>
<td></td>
</tr>
<tr>
<td>1. The Lifelong Distance Learner</td>
<td>1. Arriving</td>
</tr>
<tr>
<td>2. Open Learning, Distance Education and e-Learning</td>
<td>2. Conversing</td>
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<tr>
<td>5. Tutorials and Web-conferencing</td>
<td>5. Applying</td>
</tr>
<tr>
<td>6. Assignments to Support the Learning Process</td>
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</tbody>
</table>

Both of these courses and their constituent dimensions are deemed to be important and of direct relevance to the African HE context. They both require time and effort to satisfactorily engage in developing the capabilities required for successful online teaching and learning. In addition to good teaching skills, prospective online facilitators need to be aware that competencies required for success include being a content facilitator, competent ICT user, and designer amongst others (Wilson & Stacey, 2004; Anderson, 2008). With academic staff being under considerable pressure to enhance their teaching and learning using supporting ICTs, while maintaining their current workload, it is a challenge to prioritise time for professional development in this area, particularly in the face of little reward on offer by institutions.

Consequently, the authors decided to attempt the design, development and implementation of a remixed OER course that would provide essential elements of each of the original resources and run online over just 3 weeks. The plan was to aim for an appropriate balance of the elements, and attempt to shorten and tailor the remixed course without losing the intrinsic value of either original resource. The authors believed that these two integral changes would provide a course with a unique flavour and prove to be an attractive offering to enhance the professional development of academic faculty in African HEIs.

The significance of remixing OER

Reports on successes and challenges in remixing OER are not easily found, and Amiel (2013) cautions that OER remixing is still not widely practised. There can be a divide between creators and consumers of OER, and while developing countries may be perceived as the latter at present, there are some examples of African academics producing OER (Mtebe & Raisamo, 2014). It remains a responsibility for African academics to engage with existing OER, take advantage of the affordances of reusing and remixing according to licensing permissions, and work towards producing and using OER that are suitable for their local contexts.

An initial perception of simply finding and reusing OER ‘as is’ to save time, has proved to be inappropriate in situations where the content context and examples may not be within the frame of reference of the target audience. Within a developing country, one of the most important activities to be undertaken is to engage with the resource and thoroughly review it in terms of suitability for local purpose. In Olcott’s (2012) reflection on emerging OER issues for universities, he cites a major issue as: “developing sustainable business models for OER”, and reports that much OER work has been sustained by external project funding rather than absorbed or funded internally by institutions when undertaking teaching and learning OER-related activities requiring financial and/or human resources. In much the same way that open source software (OSS) is not free to deploy, OER are also not ‘free’ (Olcott, 2012), but rather require academic expertise and discretion, quality assurance, and contextualisation in order to be useful.
Stagg’s (2014) continuum of OER adoption (Figure 1) illustrates the remix stages as being differentiated by ‘passive’ and ‘active’ practices. The former is described as taking a single resource and adapting the content, while the latter is described as blending multiple OER into a new resource. These stages are not necessarily sequential with the remix stages not requiring the earlier adoption of the previous stages, although awareness would surely be a prerequisite in some form. Nevertheless, the maturity of the stages expressed should be noted, particularly when engaging with resources that are already licenced (Stagg, 2014).

![Figure 1: Continuum of Open Practice (Stagg, 2014)](image-url)

**Design and development of the remixed online OER course**

The design of the remixed course was informed by experience gained as members of the Saide support team during the 5 year PHEA ETI programme that ran from 2008 through to 2013 at seven participating sub-Saharan Africa HE institutions. This initiative aimed to support interventions within the participant universities to make increasingly effective use of educational technology to address some of the underlying educational challenges facing the HE sector in Africa (PHEA, 2009). One of the specific PHEA ETI objectives was to build academic capacity in quality online course design and delivery through use of a VLE, which involved a lengthy quality improvement process over time (Mhlanga, Krull & Mallinson, 2013). The outputs of this initiative were destined from the outset to be released as OER (PHEA, 2008).

Taking cognisance of the implications of remixing OER, the authors set out to practically illustrate that providing sufficient subject matter experience and knowledge of OER licensing is present, one can undertake a remix project relatively easily. In this case, the ‘Active Practitioner Remix’ stage (Stagg, 2014) was adopted and modelled.

Amiel (2013) raises several concerns around what he terms ‘design-as-remix’, which include those related to licensing, attribution, context, and technical standards. The context of this particular remix project is noteworthy in the following respects:

- The primary original course resources were also developed by African educators and designed for the African context.
- The freedom to reuse, adapt and remix was granted by the original resources.
- The task was then reduced to a regular learning design activity for online provision for the same context.

The use of the CC framework enables “authors, in a user-friendly way, to grant other people the right to make copies of their work and, if they wish, to allow other people to make changes to their work without seeking permission” (Butcher, 2011, p. 8). At the remix stage, authors needs to understand how to release the final resource under licensing conditions permitted by the original resource(s). This is a complex task requiring deep understanding of license compatibility (Stagg, 2014). As noted by Amiel (2013), the more open the license of a resource, the easier it is to remix with other resources. However, very often the resources used to remix will have different licenses. The license for Course A is CC-BY (attribution), while the license for Course B is CC-BY-NC-SA (attribution, non-commercial, share alike). These licenses are compatible and the remixed Course
C is required to use the more restrictive license of the original resources and adopt the CC-BY-NC-SA license. The course authors in this case were thus able to avoid any issue of “incompatible content” that can sometimes negatively affect the remixing process (Amiel, 2013).

Another important issue within OER remixing is the use of technical standards and formats. The selection of an open format increases the potential for reuse and remixing (Amiel, 2013). Course C was developed for distribution on the Moodle platform – an OSS VLE. Course A was already available as a Moodle VLE course, while Course B was hosted in a Sakai adaptation. Course B was thus converted into a Moodle format before remixing. Although it took great effort in recreating the course in Moodle, the course authors did not face any technical barriers in the remixing process.

Butcher (2011) notes that a critical skill required in adapting and remixing OERs is expertise in course and materials design. Both the authors have backgrounds in learning design and were integrally involved in the PHEA ETI as well as the re-development of ‘Supporting Online Learners’ (Course A) for the Moodle VLE. The authors were also previous participants in ‘Facilitating Online’ (Course B) and believed they were in a good position to make informed decisions regarding the design of the proposed remixed course.

The final design of the remixed Course C titled ‘Facilitating Online Learning’ is shown in Table 2. Aspects to note in the design of the remixed course include the retention from Course A of practical exploration of tools and technologies, aligning pedagogy and deploying activity based learning, and exploration of asynchronous vs synchronous communication. From Course B, the human elements were condensed and integrated and an assumption made that less initial uptake time would be needed to become familiar with the VLE. It was decided to loosely retain the framework from Course B, while infusing the practical and technology elements from Course A, where appropriate. The result was a 3 week fully online course with 3 days ‘start up’ time (week 0), a ‘break week for mid-course catch up, and 3 days wrap up time at the end.

For the remixed Course C, the target audience were academic faculty and educational technology support staff at African HEIs, as this was the audience that inspired the remix. It was anticipated that persons who participated in the course were already engaging to some extent in online teaching and learning in the HE sector. The teaching and learning elements to be aligned were the objectives, course materials, learning support, level of interaction / mediation, level of temporal flexibility, and the assessment structure (Mallinson, 2013).

Young and Chamberlin (2006) emphasise that a facilitator’s understanding of their pedagogical style, communication skills, and level of adaptability, impacts on their comfort levels of facilitating within a highly interactive online environment. Given the prior experience of the facilitators, the subject matter, and the nature of the online course, a high level of mediation was planned for the pilot. Guided by cohort size considerations outlined by Mallinson (2013), the participant group was limited to between 20 and 25, with 3 facilitators designated to provide the support and mediation.

Two modes of provision were considered: fully online and blended. It was decided to proceed fully online in order for participants to experience a range of implications of 100% online provision. These were anticipated to include online presence of facilitators and participants, reliable and stable power supplies and internet access for participants, and satisfactory support for the participants. A further consideration was the geographical location of the target audience, who were unlikely to be able to gather regionally let alone in a full quorum for face-to-face sessions.

In addition, the current trend of micro-credentialing was piloted by Saide through this remixed capacity building initiative. Open digital badges are readily processed through Moodle 2.5+ and care was taken to design a Saide branded badge image, develop appropriate criteria for award, and support participants (badge earners) in exporting their badges from within the VLE to an online digital open badge display and storage system such as Mozilla Backpack.
Pilot implementation

A simple email flyer was used to market ‘Supporting Online Learning’ (Course C) to known Saide partner HEIs in sub-Saharan Africa, who were encouraged to further distribute the information. The flyer provided information including: brief course description, target audience, learning outcomes, course topics, time commitment, support, and recognition of achievement. In addition, the facilitation team and organisation were named and registration cost indicated. An online registration system was developed using Google forms for potential participants to express interest and provide their details to the organisers.

Although the course elicited much interest, the uptake was only 18 participants in the pilot group, which led to the decision to use the third facilitator on an ad hoc basis. On enquiry, anecdotal evidence indicated that the cost was an inhibiting factor for the prospective participants. Despite the course being an OER, the charge was necessary to cover the time of the facilitators who were not funded. This issue was subsequently mitigated to some extent by the host organisation successfully arranging sponsorships for a number of participants.
Of paramount importance was the need for the facilitators to model the good practice they were encouraging the participants to explore and emulate. With every online action of the facilitators working consciously towards this standard, the course delivery was a particularly intense experience for the facilitators, resulting in reflection on the extent of the time and effort required to mediate a fully online course.

The pilot was run over the period October/November 2014. The VLE used for the pilot was Moodle, which was used locally by almost all of the partner institutions to whom the course had been marketed. The course was highly mediated as planned, with weekly individual progress reports emailed to each participant in order to indicate completion of the assigned activities for the period and encourage participants to undertake incomplete or not yet attempted activities. Acknowledgement of completion was provided by the awarding of both open digital badges and digital certificates for completing 80% of the course activities. Despite the high level of support, only 12 of the 18 registered participants attained the awards.

Evaluation

The lessons learned in remixing existing OER courses with similar licenses is that it is an achievable undertaking, and an OER will be reused if it is deemed to be relevant to the designated educational environment. It follows that the content, nature, and deployment environment of the OER is important as is its licensing for reuse. All of the elements listed below would contribute to propagating the further reuse, remix, and implementation of an OER course:

- The time taken to effectively remix OER should not be underestimated. The original resources need to be thoroughly reviewed in terms of content, format, language and style.
- Because elements of different resources are used, revised or combined, care should be taken to ensure a cohesive and coherent final resource. Expertise in learning design is required.
- The final resource needs to be suitable for the local context and designated educational environment.
- Where CC licenses are compatible, resources can be remixed fairly easily, and the selection of the license of the final resource is straightforward. However, authors should become familiar with the types of licenses and their legal implications, as incompatible licenses are a significant barrier to remixing.
- It is important to pay attention to technological standards and formats. The more open the technical standards and formats, the fewer barriers there are to remixing.

The implementation of the remixed course also provided an evaluation mechanism. A survey was completed by participants and facilitators at the course conclusion, in which participant feedback indicated that this had been a largely new but useful experience. Participants particularly valued the development of skills in creating online activities and using synchronous communication tools. Most participants felt that they were very well supported online. Many participants experienced challenges in devoting sufficient time to the course while fulfilling their day-to-day responsibilities. Several participants suggested extending the duration of the course to allow more time for engagement. Participants who were new to Moodle also believed that they needed more familiarisation time with the VLE.

The main recommendation for improvement from the facilitators was to increase the duration of the course by one week i.e. spread the activities across 4 weeks. The additional time also acknowledges the learning curve for participants when using a new VLE. Additionally, the authors believed that a more substantial portion of Course A elements (pedagogy and technology) should be integrated in the adjusted time frame. Before releasing the final remixed revised course as an
OER, the facilitators decided to enhance the facilitation guide so that future facilitators would have access to more detailed guidance for their own course instances. Finally, in the African context participant funding is scarce, and sponsorship should be obtained ahead of time to enable free access for participants to the mediated online course. It was noted that this funding model is practised by CILT (UCT) when running their Facilitating Online course.

It should also be noted that subsequent to the pilot, a request was received by one of the participants that the course be made available to their institution in order to remix the course for internal use. Although the unrevised course version was provided to them, this bodes well for the re-use and potentially further remix of the course.

Concluding remarks

With the pilot course completed in late 2014, the developers are planning the revisions with reference to the participant feedback and their own experience and reflections. The revised course will then be published as an OER under a CC license. The lessons learned are shared via this paper, and it is intended that they will be of use to other OER developers who are planning to remix and repurpose existing resources for their own context. The affordance of working with existing OER when designing a learning intervention was appreciated and exploited, validating the expressed intention of the OER movement. The fully online pilot course mode proved to be a considerable challenge in the African context, despite the participants having previous experience of teaching and learning online. Finally, this course provides an example of a remix project by Africans for African reuse and further remixing. This paper is intended to provide encouragement for academic staff in developing countries to take ownership of their OER adoption.

Acknowledgements

Sincere thanks to Learning Technologies and OER researchers and practitioners worldwide, who share their work under open licenses, making it possible for us to ‘stand on their shoulders’ in our research and practise in this area. Many thanks are also due to all the participants in the pilot ‘Facilitating Online Learning’ course for generously providing detailed feedback to the authors during and at the end of the course.

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Open government partnership as a platform for advancing open education policy

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Abstract
An exciting new avenue for establishing and expanding national commitments to open education has emerged through the Open Government Partnership (OGP), a multilateral initiative that aims to secure commitments from governments to make their governance more open, accountable and responsive to citizens. In the past, there has not been a strong link between open education and open government, but that has changed in the last year as both the United States and the Slovak Republic adopted commitments to open education in their OGP national action plans. The purpose of this paper is to explore OGP as a strategy for securing national-level commitments to open education in participating countries. We begin by providing background on the OGP, then discuss case studies from the United States and the Slovak Republic, and finally offer recommendations for advocates other countries to consider.

Keywords: Open government; open education; open policy; advocacy

Introduction
Support from national governments can help accelerate the open education movement both directly through supportive policies and projects, and indirectly by promoting awareness and support within civil society. A recent report by Creative Commons found that 14 countries have made national-level commitments to open education (Creative Commons, 2014). An exciting new avenue for establishing and expanding national commitments to open education has emerged through the Open Government Partnership (OGP). OGP is an initiative that aims to secure commitments from governments to make their governance more open, accountable and responsive to citizens. Open education has surfaced as a topic in the latest OGP plan development cycle.

The purpose of this paper is to explore OGP as a strategy for securing national-level commitments to open education, to help advance open educational resources and practices. We begin by providing background on the OGP, then discuss case studies from the United States and the Slovak Republic, and finally offer recommendations for advocates other countries to consider. Overall our aim is to demonstrate that OGP is an important opportunity to establish footholds toward strong open education policy in OGP participating countries.

Background: the open government partnership
The Open Government Partnership is a multilateral initiative that aims to secure concrete commitments from governments to promote transparency, empower citizens, fight corruption, and harness new technologies to strengthen governance. OGP aspires to support both government and...
civil society reformers by elevating open government to the highest levels of political discourse, providing 'cover' for difficult reforms, and creating a supportive community of like-minded reformers from countries around the world. OGP formally launched in 2011 with 8 founding nations, and as of March 2015 has grown to 65 nations (Open Government Partnership, 2015).

To join OGP, countries must commit to uphold the principles of open and transparent government by endorsing the Open Government Declaration (Open Government Partnership, 2011). Through endorsing this declaration, countries commit to "foster a global culture of open government that empowers and delivers for citizens, and advances the ideals of open and participatory 21st century government." Specifically, by signing the declaration, countries commit together to:

- Increase the availability of information about governmental activities.
- Support civic participation.
- Implement the highest standards of professional integrity throughout our administrations.
- Increase access to new technologies for openness and accountability.

In addition to endorsing this declaration, participating countries must deliver a two-year national action plan developed with public consultation that outlines specific concrete goals. Countries must also commit to independent reporting on their progress at meeting these goals. OGP national action plans address a wide variety of areas related to open government, including transparency, anti-corruption, citizen engagement, and harnessing new technologies. Commitments in these plans are designed to be concrete and action-oriented, so that the outcomes can be clearly measured. In total, OGP participating countries have made over 1,000 commitments to make their governments more open and accountable (Open Government Partnership, 2014).

Many of these commitments relate to opening up government information, which has naturally formed an intersection with other ‘open’ movements, including Open Access to scholarly and scientific research, open data, open science, free and open source software, and open education. The principles behind these movements embody the civic participation and harnessing new technologies elements of the Open Government Declaration.

Many countries have focused on making commitments in the area of open data (Open Government Partnership, 2014). Opening up government datasets for use and reuse by the public can support both transparency by opening up information and also citizen engagement by enabling social and commercial innovation. Many countries have launched data portals for datasets containing key government information including budgets and company registers, and also other useful data including national statistics and maps (Open Knowledge, 2015). This has translated to a better ecosystem for companies, entrepreneurs, and developers to build products of value on top of this data, for example through mobile applications (Tepe, 2012). The resulting innovations around open data were initially unforeseen, which illustrates how proactive open publication of data can lead to new economic value.

The success of government open data commitments led to the exploration of opening up other forms of government-created and government-funded information. Over the last year, open education has surfaced as a topic in the latest OGP plan development cycle. As national movements for open education continue to develop and grow, this has created an exciting opportunity for advocates to leverage OGP as an avenue secure top level national commitments for open education.

In the next section, we will explore the case studies of the first two countries to adopt open education commitments in OGP national action plans: the United States and the Slovak Republic. As of March 2015, we are unaware of any other countries that have adopted open education commitments in OGP action plans, but anecdotal reports have suggested there are ongoing conversations in several places that may become visible as the next round of plans are finalized.
Case study: United States

In September 2014, the United States became the first country to formally adopt open education commitments in its OGP national action plan. President Barack Obama announced the new commitments in a speech at United Nations marking the 3rd anniversary meeting of the OGP. (Smith & Sinai, 2014). Incorporated in an update to the 2014–2015 National Action Plan, the U.S. added a new section on open education (United States, 2014). “There is a growing body of evidence that the use of open education resources improves the quality of teaching and learning, including by accelerating student comprehension and by fostering more opportunities for affordable cross-border and cross-cultural educational experiences,” the section states.

The open education section outlines three action items to be carried out in various collaborations between the Departments of Education, Labor and State and the White House Office of Science and Technology Policy by the end of 2015:

- Organize a workshop with stakeholders from academia, industry and government to foster international collaboration and produce best practices on open education policy.
- Conduct three pilot programs overseas that use OER to support learning.
- Launch an online skills academy through $25 million in competitive grants that will offer open online courses and create high-quality free or low-cost pathways to degrees and other credentials (U.S. Department of Labor, 2015).

The goals of this section are relatively small in the context of U.S. federal policy. However, their announcement and public recognition by President Obama marked an important milestone for the U.S. open education movement, as it was the first national commitment on open education to come straight from the White House. Furthermore, the establishment of a section on open education in the National Action Plan provides an important avenue for future advocacy efforts that could expand and build upon the goals.

In development of the open education section of the plan, the White House Office of Science and Technology Policy convened a stakeholder meeting including diverse perspectives from the open education movement. The participants identified several key areas where the goals of open education and open government overlap, including international collaboration, open licensing policies for federally funded resources, and increased transparency in government spending and procurement processes relating to educational materials. These ideas provide potential areas to expand the OGP plan in future iterations.

The U.S. commitments built on existing federal efforts relating to open education dating back to the beginning of the Obama Administration. First, in 2011 the U.S. launched the $2 billion Trade Adjustment Assistance Community College and Career Training (TAACCCT) grants program, which funded projects to improve workforce training programs at community colleges and other 2-year institutions of higher education (U.S. Department of Labor, 2011). As part of the implementation of this program, the U.S. Department of Labor conditioned grants on the use of a Creative Commons Attribution license for all grant-funded educational materials and the public sharing these materials in an open repository (Skills Commons, 2015). A handful of additional programs at the Departments of Labor, Education and State have adopted similar conditions (Creative Commons, 2015). Furthermore, the State Department launched the Open Book Project in 2013 to promote collaboration with the Middle East and Northern Africa region by expanding access to free, high-quality open educational resources in Arabic (U.S. Department of State, 2013).
Case study: Slovak Republic

The Slovak Republic became the second country to include open education commitments in an OGP plan when it approved its 2015 National Action Plan on 11 February 2015 (Slovak Republic, 2015). Couched in the nation’s successful open data commitments, the open education chapter lays out a strong case for the benefits of open education for Slovakia. The introduction states:

In education, research and development, a great amount of content is created: educational materials, studies, publications, etc. These are often published in such a manner that access to them is complicated even for experts within academia, not to mention the wider public. Proprietary licenses, as well as technological issues related to publishing create barriers which need to be eliminated. In coordinated approach and removal of barriers at the top using legislation and technological coordination, powerful effects can be achieved.

The open education chapter includes two discrete sub-chapters for open educational resources (OER) and Open Access to scientific and scholarly research publications, each with its own set of commitments.

The commitments regarding OER include:

- Identify digitally available educational resources at the Ministry of Education, Science and Sport that can be released openly, and evaluate existing repositories at the Ministry for the purpose of establishing a central repository to publish OER.
- Analyze the procurement process for educational resources in primary and secondary education and run a pilot program of a new proposed procurement process that would enable the release of such materials under an open license.
- Propose and implement awareness measures for open educational resources.
- Join multilateral activities in Europe and beyond that support the creation, improvement, sharing and reuse of open educational resources.

The commitments regarding Open Access include:

- Identify and evaluate existing repositories at the Ministry for the purpose of establishing a central repository for storing scientific publications, including text and data.
- Work together with affected institutions to identify barriers to Open Access implementation and conduct an analysis of requiring that publications be provided to the public in a free and open manner.
- Propose a mechanism for voluntarily publishing data related to scientific publications as Open Data.
- Inform Slovak educational and research institutions about the benefits of Open Access.
- Cooperate with other countries on the creation of Open Access strategies and share knowledge gained in Slovakia.

The opportunity to incorporate open education into the Slovak 2015 National Action Plan arose when the nation’s Digital Champion Peter Pellegrini became Minister of Education. There was a natural connection between open government and harnessing new technologies to expand access to information in education, and after consultation with more than a dozen ministry officials, the open education commitments were proposed in the September 2014 public draft of the plan (Slovak Republic, 2014). A final draft was adopted after consultation with primary and secondary schools, higher education institutions, research institutions, and legal experts within government.

Other OGP commitments from the Slovak Republic include increasing public participation, increasing efficiency and transparency of the judicial system and improving the situation with open data. The Office of the Plenipotentiary of the Government for the Development of the Civil Society,
which is responsible for the nation’s OGP initiatives, is also participating in the international COMSODE project (Slovak Republic, 2014). COMSODE outputs include an open data publishing platform, as well as methodologies and documentation of best practices for publishing data. These methodologies and software are openly licensed and available to the organizations which are responsible for carrying out OGP commitments in Slovakia. They are also starting to be adopted in several other countries. COMSODE is an example where openly developed software and content can be adopted abroad in new and innovative ways.

Methods for advancing OGP open education commitments

The adoption of open education commitments in the U.S. and Slovakia illustrates how OGP can be an effective avenue for establishing national support for education. This section will discuss how potential advocates can consider initiating this approach in their own countries.

**Identifying the opportunity**

The first set of recommendations relates to identifying whether OGP national action plans are a viable avenue for advocacy.

- Confirm OGP Membership: The first step is to establish whether a country is a member of OGP, which can be easily determined from the OGP website. The website also provides information about the action plan status of each participating country, including whether it is currently developing an action plan and whether it has previous action plans. If the country is not a member of OGP, it may make sense to share information with contacts in government about the initiative and how to join. As of March 2015, 65 countries are members (Open Government Partnership, 2015).

- Identify Government Contact: Each country involved in OGP typically appoints a specific office or ministry to lead the development of the national action plan. In the U.S., the key point of contact is the White House Office of Science and Technology Policy plays a leadership role, and in Slovakia it is the Office of the Plenipotentiary of the Government for the Development of the Civil Society. This information can typically be found within a country’s existing national action plan.

- Educate Government Officials: Since open education is not yet a mainstream topic in OGP action plans, implementers may not yet be aware that this is a possible avenue for reform. Once the appropriate contacts within government have been determined, it is important to reach out and provide information about open education. It would be helpful to start with basic information, such as a one-page summary about open education, and also provide information about how the U.S. and Slovakia have adopted commitments in their plans. Resources are available with overview of open education policies on a number of levels, as well as inspiring stories from around the world.

**Making the case**

Once the opportunity has been identified, the next step is to make the case for open education as a potential component of OGP action plans. It is best to start by highlighting the areas where open education and open government intersect.

- Civic Engagement: One of the key components of the Open Government Declaration is to promote civic engagement in government, and educated citizens are more active citizens. Open education ensures that more people have access to information, both through formal educational structures and to educate themselves.
Transparency: When taxpayer funding is spent on the development of educational materials and research, citizens should have the right to see the outputs it produces. Open sharing ensures transparency for how funding is being spent.

Efficient Use of Public Funds: When the public buys educational resources, they should only have to pay for them once. The principles of open education ensure that everyone can freely access, use, share, keep, adapt, and build upon publicly funded works. This guards against duplication of efforts, since once a resource is created, it can be used by everyone, forever, for free. It also enables new uses of government-funded information that may have not been imagined before.

Harnessing New Technologies: When information is shared freely, students, teachers, researchers, entrepreneurs, and members of the public can use and build upon it. Much in the same way that open data has promoted economic development, open educational resources can enable businesses and innovators to develop products of value on top of it.

Access to Knowledge: Freely sharing educational resources not only enables citizens of the country to access and use the information, but also anyone else in the world. This can showcase the important knowledge produced within a country to a global audience, and also serve ethnic or cultural populations that reside outside of a country.

International Cooperation: A global movement has grown around open education, with top-level support from numerous governments. In Europe, the European Commission has been endorsed open education through its Opening Up Education initiative. Countries who move in the direction of open education will find important allies and multilateral opportunities to collaborate.

Advocacy strategies

Once a government has expressed interest in adopting commitments relating to open education in OGP action plans, there are several strategies to consider based on experiences in the U.S. and Slovakia.

Engage Inside Champions: As is often the case with government policy, inside champions in relevant governmental divisions were key at driving forward the open education commitments in both the U.S. and Slovak national action plans. Identifying and supporting advocates inside of government can be one of the most effective ways to overcome the administrative hurdles of policy, which can often stand in the way of even the most broadly popular ideas. Even seemingly lower level officials can be influential if they are positioned to intervene at important stages of policy development.

Start with Strong Language: A common strategy for policy development is to start with the strongest possible language, and work backwards based on what is possible given resources and stakeholder support. The Slovak plan took this approach, proposing a set of more ambitious goals in the initial draft, and scaling it back based on the timeframe and input from stakeholders and the ministries responsible for implementation. There are cases when this approach is not appropriate, for example if the timeline for adopting a plan is short.

Identify Existing Opportunities: In cases where governments are looking to start small, commitments can be easier to make when the actions are already in line with current plans and resources. While the OGP requires all action plan commitments to be new (i.e. not previously accomplished), governments can still set meaningful goals based on existing efforts. For example, plans for the U.S. Online Skills Academy, the largest of the nation’s three OGP open education commitments, were already underway prior to September 2014. The U.S. formally adopted this program as part of the national action plan.
• Consult Stakeholders: Consultation with civil society is central to the mission of OGP action plans, so engaging stakeholders in the development of open education commitments is essential. This is important because OGP action plans are meant to set practical, action-oriented goals that the government will ultimately be accountable for achieving. So, working with the people affected by the goals from the beginning will help lay groundwork for success. Both the U.S. and Slovakia conducted stakeholder consultations that helped address potential barriers at the outset and gathered input on how the commitments can be most effectively implemented. Key stakeholder groups for open education include education and research institutions, teachers and faculty, students, government agencies, publishers, and organizations with expertise on open education.

• Consult Experts: Another important strategy for action plan development is to work with open education experts. Members of international open education community have more than a decade of expertise working toward open education reforms, and advocates are often eager to provide advice and recommendations based on experiences in other countries. Once again, both the U.S. and Slovakia sought input from outside experts to help develop and consult the wording of their commitments.

• Plan for Implementation: Commitments are only meaningful if they are fulfilled, and policies are only as strong as their implementation. When advocating for OGP commitments, it is critical to plan in advance to ensure the necessary mechanisms, resources and support are in place. Sometimes it is better to adopt a smaller goal that is sure to be successful than an ambitious goal that may not be possible to fulfill. OGP is intended to be an ongoing cycle, so reforms not achieved in one action plan can be addressed in the next – or achieved independently of the OGP altogether.

Conclusion

OGP action plans provide an unprecedented opportunity to establish national commitments to open education that fuel the movement by raising visibility, providing key resources, and enacting supportive policies. This avenue is particularly advantageous because of the visible community around it and the focus on action-oriented commitments. That said, it is important to remember that securing OGP commitments is not the equivalent of enacting reforms – there is still work to do once the plan is adopted. Furthermore, OGP cannot operate as an island, the plans must be accompanied by support in civil society for open education. But, with the right conditions, OGP can be an effective avenue for open education supporters in OGP member countries to pursue.

References


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