Editorial policies

Open Praxis is a peer-reviewed open access scholarly journal focusing on research and innovation in open, distance and flexible education. It is published by the International Council for Open and Distance Education—ICDE.

The aim of Open Praxis is to provide a forum for global collaboration and discussion of issues in the practice of distance and e-learning. Open Praxis welcomes contributions which demonstrate creative and innovative research, and which highlight challenges, lessons and achievements in the practice of distance and e-learning from all over the world.

Open Praxis provides immediate open access to content on the principle that making research freely available to the public supports a greater global exchange of knowledge.

Open Praxis is a quarterly journal published in January–March, April–June, July–September and October–December.

Research articles and innovative practice articles are subject to double-blind peer review by a minimum of two Reviewers.

Authors need to register with Open Praxis prior to submitting, or if already registered can simply log in and begin the 5 step submission process.

Editorial team

Editor
Inés Gil-Jaurena, Universidad Nacional de Educación a Distancia (UNED), Spain

Consultative editor
Beatriz Malik, Universidad Nacional de Educación a Distancia (UNED), Spain

Editorial board
Suresh C. Garg, Indira Gandhi National Open University, New Delhi, India
Gangappa Kuruba, University of Botswana, Botswana
Thomas P. Mackey, SUNY Empire State College, New York, United States
Marta Mena, National Technological University (Universidad Tecnológica Nacional), Argentina
Alan Tait, The Open University, United Kingdom
Yang Zhijian, Open University of China (OUC), China

Publisher and contact information

ICDE—International Council for Open and Distance Education
Lilleakerveien 23
0283 Oslo, Norway

editor@openpraxis.org
www.openpraxis.org
http://dx.doi.org/10.5944/openpraxis
ISSN 2304-070X

Journal history


Copyright notice

Authors who publish with this journal agree to the following terms:

a. Authors retain copyright and grant Open Praxis right of first publication with the work simultaneously licensed under a Creative Commons Attribution 4.0 International License that allows others to share the work with an acknowledgement of the work’s authorship and initial publication in Open Praxis.

b. Authors also grant ICDE right to publish a printed compendium of Open Praxis published articles in an annual basis.

c. Authors are able to enter into separate, additional contractual arrangements for the non-exclusive distribution of the journal's published version of the work (e.g., post it to an institutional repository), with an acknowledgement of its initial publication in Open Praxis.

Open Praxis does not necessarily agree with opinions and judgements maintained by authors.
# Table of Contents

**Editorial**

Brief report on *Open Praxis* figures and data (2013–2014)
Inés Gil-Jaurena 3

**Research articles**

Social Interaction in Self-paced Distance Education
Terry Anderson, Lorne Upton, Jon Dron, Judi Malone, Bruno Poelhuber 7

Rhizo14: A Rhizomatic Learning cMOOC in Sunlight and in Shade
Jenny Mackness, Frances Bell 25

Students’ and tutors’ perceptions of feedback on academic essays in an open and distance learning context
Jack Matlou Chokwe 39

Perspectives on influencing aspects for students’ acceptance of multimedia materials in training programs
Mayra Lucía González Córdova, Marcela Georgina Gómez Zermeño, Irma Antonia García Mejía 57

Role of e-learning in capacity building: An Alumni View
Muhammad Zaheer, Sadia Jabeen, Mubasher Majeed Qadri 71

Key skills for co-learning and co-inquiry in two open platforms: a massive portal (EDUCARED) and a personal environment (weSPOT)
Alexandra Okada, Antonio Roberto Coelho Serra, Silvar Ferreira Ribeiro, Sônia Maria da Conceição Pinto 83

**Innovative practice articles**

Strength in Numbers: Learning Together in Online Communities—A Learner Support System for Adult First Nation Students and Practitioners
Heather Sanguins 103

**Book reviews**

Book review of *The new landscape of mobile learning: Redesigning Education in an App-Based World*
Tony Hetrick 113
Brief report on *Open Praxis* figures and data (2013–2014)

Inés Gil-Jaurena

*Editor for Open Praxis. Universidad Nacional de Educación a Distancia—UNED (Spain)*

editor@openpraxis.org

*Open Praxis* has reached two years of regular publication in its new stage, when it was relaunched as the ICDE scholarly, peer-reviewed and open access journal. During this period -2013 and 2014- 2 volumes / 8 issues have been published.

In this brief report, that completes those presented in previous issues (Gil-Jaurena, 2014a, 2014b), we highlight some relevant data and figures that provide an overview of the work we have developed and the achievements we have reached.

Table 1 presents different journal statistics: number of submissions and number of finally published papers; acceptance rates; number of authors and reviewers; paper views (as reported by OJS reports). Figures are stable when referred to papers received and published and acceptance rates (around 60%). Number of authors and reviewers have increased. Paper views, being cumulative, are logically higher in volume 5.

<table>
<thead>
<tr>
<th>Table 1: Journal statistics per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013, volume 5 issues 1–4</td>
</tr>
<tr>
<td>Issues published</td>
</tr>
<tr>
<td><strong>Items published</strong></td>
</tr>
<tr>
<td>Research papers</td>
</tr>
<tr>
<td>Innovative practice papers</td>
</tr>
<tr>
<td>Special papers (ICDE prizes 2013, OCWC papers 2014)</td>
</tr>
<tr>
<td>Editorial</td>
</tr>
<tr>
<td>Software reviews</td>
</tr>
<tr>
<td><strong>Total submissions</strong></td>
</tr>
<tr>
<td>Rejected before peer-review</td>
</tr>
<tr>
<td>Peer reviewed</td>
</tr>
<tr>
<td>Accepted</td>
</tr>
<tr>
<td>Days to review</td>
</tr>
<tr>
<td>Days to publication</td>
</tr>
<tr>
<td><strong>Acceptance rate</strong></td>
</tr>
<tr>
<td>Number of authors</td>
</tr>
<tr>
<td>Average authors per paper</td>
</tr>
</tbody>
</table>
A total of 137 authors (excluding editor) have contributed to volumes 5 and 6. Five of them have published two papers in this two-year period. Considering the international scope of the journal (see http://openpraxis.org/index.php/OpenPraxis/about/editorialPolicies#focusAndScope), contributions need to be geographically and institutionally balanced. Both published volumes meet these requirements (table 2). A total of 66 institutions have had authors published in 2013 and 2014. 25 of them are ICDE member institutions. Published papers were from 19 different countries in 2013 and from 16 different countries in 2014.

### Table 2: Authors' international balance

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>From UNED</td>
<td>Maximum 10%</td>
<td>2.94%</td>
<td>6.45%</td>
</tr>
<tr>
<td>From Spain</td>
<td>Maximum 25%</td>
<td>2.94%</td>
<td>16.13%</td>
</tr>
<tr>
<td>From Europe</td>
<td>Maximum 50%</td>
<td>17.65%</td>
<td>41.94%</td>
</tr>
<tr>
<td>From a wide range of regions other than Europe</td>
<td>Minimum 25%</td>
<td>82.35%</td>
<td>58.06%</td>
</tr>
</tbody>
</table>

About reviewers, they also reflect a geographical and institutional balance, as shown in the list of reviewers available in Open Praxis website (http://openpraxis.org/index.php/OpenPraxis/pages/view/reviewer). A total of 45 reviewers undertook reviews for volume 5 and 53 did so for volume 6. From them, 12 have repeated as reviewers in both years. Approximately 59% of the reviewers belong to ICDE member institutions, and 59% hold a PhD.

Regarding visitors and readers, figure 1 shows their location. Since publication of issue 5(1) in January 2013 until December 15th 2014, we have had visits from 175 countries, being the top ten the following (in descending order): United States, Spain, United Kingdom, India, South Africa, Canada, Australia, Pakistan, Germany and Philippines (info provided by Google Analytics). We can appreciate an increasing impact in academic publications. Open Praxis has had 133 citations to papers published in 2013 and 2014. Specifically, 26 papers out of 38 in volume 5 have received a total of 118 citations, and 8 papers out of 35 in volume 6 have received a total of 15 citations. Open Praxis h-index is 15 (source: Google Scholar). Figure 2 shows citations per year, highlighting period covered since the relaunching of the journal.

After this brief report on Open Praxis figures in 2013 and 2014, let’s introduce this first Open Praxis issue in volume 7, which includes six articles in the research papers section, one in the innovative practice papers section, and a book review.

Terry Anderson, Lorne Upton, Jon Dron, Judi Malone and Bruno Poelhuber (Social Interaction in Self-paced Distance Education) present a case study, the analysis of an experience in a regular course where they have moved self-study to a more social context. By enhancing a cognitive behavioral pedagogy based course with a social interaction layer and other variations that are detailed in the paper, the authors explain how students and tutors have interacted, contributed and
valued the learning experience. With a reflective and exhaustive approach, the authors present results, discussion and recommendations, both for practice and for future research, highlighting relevant lessons learned for enhancing a connectivist social learning opportunity.

Jenny Mackness and Frances Bell (Rhizo14: A Rhizomatic Learning cMOOC in Sunlight and in Shade) also focus on a connectivist experience, an experimental MOOC in this case, for which they provide a learners’ perspective, being themselves participants in the open course. They present a literature review and describe the research developed, where participants in the cMOOC were asked and expresses positive and negative aspects experimented as learners. The paper also highlights ethical implications in MOOCs and in research about MOOCs.

Covering a different topic, Jack Matlou Chokwe (Students’ and tutors' perceptions of feedback on academic essays in an open and distance learning context) collects students’ and instructors’ views to analyze the use and misuse of feedback as an opportunity for learning. After establishing a conceptual frame about the relevance of feedback, the study reflects how students value, but sometimes miss, good quality feedback. On tutors’ side, the study shows how feedback about
grammar mistakes prevails over feedback about content. The paper includes recommendations for effective feedback.

Mayra Lucía González Córdova, Marcela Georgina Gómez Zermeño and Irma Antonia García Mejía (Perspectives on influencing aspects for students’ acceptance of multimedia materials in training programs), from a face-to-face context, analyze five aspects that students and instructors perceive have an influence on the acceptance of multimedia and educational technology in continuing education: comprehension of the course contents, perspective on the use of educational technology, beliefs of multimedia learning, requirement of multimedia materials, and academic performance. These results may lead to improve instructional design and to implement multimedia more effectively.

Next two papers relate to competence and skills development in virtual environments. Muhammad Zaheer, Sadia Jabeen and Mubasher Majeed Qadri (Role of e-learning in capacity building: An Alumni View) present a survey-based study with students at Virtual University of Pakistan. After a literature review, they explore the contribution of e-learning in capacity building of students in developing countries with a specific focus on Pakistan, via collecting students’ opinion. Both students’ competences and success factors are analyzed, and conclusions are positive with regards to contribution of e-learning to capacity building, which highlights the relevance of e-learning as a delivery mode for providing access to education in developing contexts.

Alexandra Okada, Antonio Serra, Silvar Ribeiro and Sonia Pinto, in their paper Key skills for co-learning and co-inquiry in two open platforms: a massive portal (EDUCARED) and a personal environment (weSPOT), also address the development of skills, in this case by analyzing and comparing the experience in two digital environments for co-learning and co-inquiry. After describing those two environments and presenting a competence model developed by the research team (funded by European Community’s Seventh Framework Programme) and a large literature review about competences in a digital era, the authors highlight and compare the skills developed in the two platforms.

In the innovative practice section, Heather Sanguins (Strength in Numbers: Learning Together in Online Communities—A Learner Support System for Adult First Nation Students and Practitioners) builds upon the political and cultural requirement of providing a learner support system that addresses First Nation adult students’ needs. She argues about the appropriateness of building this innovative support system by using online communities of interest and practice, given the relevance of “community” for First Nations. With a rich conceptual background, the paper leads to a proposal that the author would pilot in a future research.

Finally, Tony Hetrick presents a Book review of The new landscape of mobile learning: Redesigning education in an app-based world, a book edited by Charles Miller and Aaron Doering and published in 2014.

We hope that this diverse set of papers will invite to discussion and innovation in open, distance and flexible education.

Special thanks from Open Praxis to the authors and reviewers who have contributed to this issue.

References


Papers are licensed under a Creative Commons Attribution 4.0 International License

Open Praxis, vol. 7 issue 1, January–March 2015, pp. 3–6
Social Interaction in Self-paced Distance Education

Terry Anderson, Lorne Upton, Jon Dron & Judi Malone
Athabasca University (Canada)
terrya@athabascau.ca, lorneupton@athabascau.ca, jond@athabascau.ca & judim@athabascau.ca
Bruno Poelhuber
Université de Montréal (Canada)
bruno.poellhuber@umontreal.ca

Abstract

In this paper we present a case study of a self-paced university course that was originally designed to support independent, self-paced study at distance. We developed a social media intervention, in design-based research terms, that allows these independent students to contribute archived content to enhance the course, to engage in discussions with other students and to share as little or as much personal information with each other as they wished. We describe the learning design for the intervention and present survey data of student and tutor perception of value and content analysis of the archived contributions. The results indicate that the intervention was positively received by tutors and by the majority (but not all) students and that the archive created by the students’ contributions was adding value to the course. We conclude that the intervention was a modest, yet manageable example of a learning enhancement to a traditional cognitive-behavioral, course that has positive impact and potential with little negative impact on workload.

Keywords: Social Networks; blogs; self-paced study; online education; web 2.0; enhanced learning

Conceptual Framework

One of the greatest benefits of distance education and especially in its latest incarnation as online learning, has been the increase in access afforded to both students and teacher. The capacity to teach and to learn “anywhere/anytime” and yet still have the option of engaging in a variety of social interactions is the most powerful affordance of the educational net. Notwithstanding the advantages of being able to shift time and space, most online learning is still confined to the commencement and completion dates dictated by educational institutions. Not only does this limit learner capacity to start a course of studies to a few dates in the year, but, as importantly, dictates a speed at which the course of study is offered. Thus typically a cohort of learners work together (even though they may be in different geographic locations) and regularly interact with their fellow students and the teacher using asynchronous and/or synchronous communications technologies. This moving ensemble supports 2nd generation social constructivist pedagogy (Anderson & Dron, 2011) and quite easily supports collaborative and other social learning activities. However, any imposed pace is too fast for some learners and too slow for others. Thus, the search for a mode of online education that allows for individual learners to control not only the geographic space, but also the commencement date, the nature of their personal relationships and the pace of their educational study.

The first forms of distance education were delivered by print packages and used postal correspondence to support interaction between learner and teacher. For technological reasons, there was no possibility of and thus no learning design that could encourage student-student interaction. This led to programming based on the development and delivery of high quality content (in multiple formats including text, video and later computer based training (CBT) and a pedagogy
which we defined as first generation, cognitive/behavioural distance education pedagogy (Anderson & Dron, 2011). This mode of distance education soon became identified as “independent” learning and it was noted that there was no logical reason why students should commence at any particular time of the year, nor that they should proceed at a pace dictated by more than their individual time availability and capacity for learning. With the development of low cost interactive technologies including asynchronous computer conferencing and synchronous audio teleconferencing, distance education entered a new era defined by Garrison and Shale (1990) as “education at a distance” not “distance education.” By that they meant that distance education need no longer be associated exclusively with independent study. New second generation social constructivist pedagogy became possible and was seen as desirable by many learners and teachers who were comfortable with this educational model, which also dominated classroom delivery. These two models of distance education have co-existed for many years and both are now supported by a variety of web technologies. With the development of connectivist pedagogy, it became possible to envision a third model of distance education in which students retained freedom of time, space and pace, yet were also able to build learning networks and work cooperatively, not collaboratively -see Paulsen (2008), with other students.

Recent development of user generated content technologies drastically increase the potential for more user control and ownership of their personal learning networks (PLEs) and subsequently also increases the demand for more responsive forms of higher education. Buchem, Attwell and Torres (2011) note five dimensions of learner control while engaged in formal learning which go beyond the control of time and place to control of objective setting, tools, rules, tasks and social space. The intervention we explore in this paper is a small step that expands learners’ control of the social space by allowing the learner to control with whom they communicate and to initiate discussions and potential collaborations. Thus the intervention not only increases learners agency but potentially their engagement that “emphasizes the shift of control and ownership from the educator or the designer to the learner” (Buchem, Tur Ferrer & Holterhof, 2014, p. 15). We have expanded this discussion to include pedagogical and technical constraints and affordances of ten different components of freedom in other work (Dron & Anderson, 2014b).

Assuming that we are attempting to move self-study to a more social context to benefit from new pedagogical developments and the many benefits associated with interaction educational context -for a review of these see (Anderson & Kuskis, 2007)-, it is useful to both plan, anticipate and support the most effective type(s) of social interaction. We have been writing recently (Dron & Anderson, 2014a, 2014b) about three distinct modes of social aggregation that can be used to educational advantage. The first is the familiar group, with structured and defined membership that is used in 2nd generation distance (social constructive) and classroom education today. The second is the network consisting of both weak and strong ties amongst learners. Finally, the “set” is an aggregation of those who have something in common, and use that impersonal commonality to collectively serve one another’s educational and social needs. In this case study, we have built an online social set of tools that potentially supports all of these social aggregations, including independent learners. We use this case to examine actual use in a real and emergent distance educational context.

**Research Questions**

The challenges and opportunities enabled by our social toolset led to the following research questions:
• Would students and teachers engaged in self-paced programming designed with an independent study, cognitive behavioral pedagogy, appreciate and benefit from a connectivist social learning opportunity?
• What would be the impact on teacher and student workload?
• What are the perceptions of value of these interactive activities?
• How can one best characterize or model the social interaction and form of social organization that arises in this self-paced context?

Context of the Case

This study takes place in Athabasca University, a public Canadian university that offers a wide range of undergraduate degree programs that is organized using continuous enrollment and self-paced study. Students are allowed up to six months to complete each course in which they enroll, which may (at a cost to the student) be extended by up to a further six months. The courses are designed by a team of academic experts and learning designers, and assessment and student-teacher interaction is supported largely by part-time academic tutors. The case presented here is a senior level undergraduate psychology course with approximately 250 students enrolled per year. The course content was provided through textbooks, a course manual and assignment drop box delivered online through a Moodle Learning Management System (LMS). In order to both encourage and assess more cooperative engagement, a second social networking toolset was integrated into course. This system, which we christened “The Landing,” is based on the open source Elgg framework and provides a host of social tools including blogs, wikis, photo albums, polls, microblogs, etc. The site was developed in-house and access is available to all students, staff and faculty (including alumni) at the University -see (Dron & Anderson, 2014a) for a more detailed description-. Within the Landing community a closed group was created and all students in the psychology course (both current and alumni) were encouraged to join that group.

A learning activity was designed by the course team that allowed students to earn 5% of their final mark by making a contribution to the course through linking to a resource (a research article, website, or learning resource) that they found on the internet or to initiate or respond to a blog conversation with other students and relevant to the course study. A rubric was created and distributed to students that assessed the value and originality of the contribution and the appropriateness of the language and organization to a senior level undergraduate course.

Of particular interest in this case was the decision by the course tutors not to interact in the social networking group, though they actively assessed and sent feedback to individual students on their contributions. This meant decidedly less “teaching presence” (Anderson, Rourke, Archer & Garrison, 2001) than stressed in more constructivist learning contexts and thus is a unique context in which to explore new models of learning. Obviously the decision not to be active participants also reduced the fear of tutors of increased workload obligations related to this intervention. This also led us to inquire of students if they either appreciated or resented the absence of active presence of course tutors in the group.

The course group creates a space where students recommend contributions of other students that they find of value and to search through an archive based on user-generated tags or a full text search (figure 1). Students were also encouraged (though not assessed) to use non-group features of the Landing environment including populating their personal profile, contributing to their personal blogs, photo albums or microblogs. The system allows the students to expose any content they contribute to the psychology group members only, or to all members of the University community or to the open Internet including search engines. It was hoped that some students would find value
in the wider social networking context provided by the Landing to develop their web presence and engage in the kind of serendipitous interaction that can and often does occur while engaged in campus-based university study.

Method

The case study employed a pragmatic, mixed method and design-based research methodology. We used a researcher-designed web-based questionnaire to query the current and recent graduates of the course. We also used content analysis of the student contributions, analyzed the course structure and interviewed the faculty and tutors involved in design and implementation of the course and the intervention. The qualitative interview transcripts and content submitted to the group were analyzed using a constant comparative methodology (Dye, Schatz, Rosenberg & Coleman, 2000).

Results

Survey results

We designed a short, web-based questionnaire and an invitation to complete the questionnaire was sent in March 2014 to the 279 students who had enrolled in the course between October 2012 and September 2013. Most of these students had either completed the course, were in progress or dropped out at the time the questionnaire invitation was mailed. A total of 39 (14%) of students completed the questionnaire. As is common in many upper level courses at this University, 38% of the students were program students expecting to graduate from this university. While 61% of the students were visiting students that were enrolled in other university programs and using the course credit earned towards a degree at another university. This detail of the case may have a significant influence in that many of the visiting students may have less desire for social interaction with other students than program students since they have access to student community at their "home" institution. Also, not unusual for this university and subject, 79% of the respondents were female.

Students were required to post at least one text discussion or comment and one resource (file or bookmark). 21% of the students did only this, thus meeting minimal expectations. Interesting was that 56% of the students reported contributing 2–4 resources and 29% reported contributing more than 4 comments.

The participation rate was “bursty” with students reporting a varied number of visits from zero to six times or more (table 1).
Table 1: Number of student contributions

<table>
<thead>
<tr>
<th>Answer</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never (A1)</td>
<td>3</td>
<td>7.68%</td>
</tr>
<tr>
<td>1–2 times (A2)</td>
<td>11</td>
<td>28.28%</td>
</tr>
<tr>
<td>3–5 times (A3)</td>
<td>13</td>
<td>33.33%</td>
</tr>
<tr>
<td>6 times or more (A4)</td>
<td>11</td>
<td>28.28%</td>
</tr>
</tbody>
</table>

A slightly lower number reported searching through the archive (table 2), though a significant percentage of the respondents reported visiting the archive more than 5 times.

Table 2: Use of the Student generated archive of comments and resources

<table>
<thead>
<tr>
<th>Answer</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never (A1)</td>
<td>10</td>
<td>25.64%</td>
</tr>
<tr>
<td>1–2 times (A2)</td>
<td>13</td>
<td>33.33%</td>
</tr>
<tr>
<td>3–5 times (A3)</td>
<td>9</td>
<td>23.08%</td>
</tr>
<tr>
<td>6 times or more (A4)</td>
<td>6</td>
<td>15.38%</td>
</tr>
</tbody>
</table>

Over half (57%) had explored the Landing features beyond those accessible in class group but most of these had not participated in a significant way in the larger university community on the system.

Respondents were asked to assess the value of the intervention along seven dimensions, using a 5-point semantic differential scale. The scale was converted to numeric ratings where 1 indicates no value and 5 very useful. Table 3 shows the perceived value by all students. In addition we differentiated the program from the visiting students and found a significant difference in the mean rating in combined valuations (T=.015, DF). The program students valued the contributions of others more than visiting students in all 6 items, and there was significant differences in 3 items.

Table 3: Perceived value of the components of the social network intervention.

<table>
<thead>
<tr>
<th>Value of the contributions by others for:</th>
<th>Avg.1–5 Program Students</th>
<th>Visiting Students</th>
<th>TTest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enriching the course content</td>
<td>3.6</td>
<td>4.07</td>
<td>3.36</td>
</tr>
<tr>
<td>Finding resources of use outside the course</td>
<td>3.4</td>
<td>4.0</td>
<td>3.14</td>
</tr>
<tr>
<td>Reinforcing content from the text</td>
<td>3.2</td>
<td>3.64</td>
<td>3.04</td>
</tr>
<tr>
<td>Helping me connect to other students</td>
<td>3.1</td>
<td>3.28</td>
<td>3.04</td>
</tr>
<tr>
<td>Helping me write term papers for this course</td>
<td>2.4</td>
<td>3.07</td>
<td>1.64</td>
</tr>
<tr>
<td>Helping me study for exams</td>
<td>2.2</td>
<td>2.9</td>
<td>1.7</td>
</tr>
</tbody>
</table>

* sig. at <.05; sig ** <.01
The students were asked about the appropriateness of the amount of their final grade (5 percent) allocated to this social networking task. The large majority (84%) thought the mark was about right, 16% thought it was too little but none indicated that five percent was too much (figure 2). Student open-ended comments on this question were inclined to support more emphasis on the activity such as one who remarked “Increasing the value of using the activity would encourage students to explore it more and therefore see how valuable it really is.” Or another who commented: “It seemed like more of an annoyance for so little percentage. If it was worth more (say 10 or 15%) then I think I would’ve taken it more seriously and put more thought into it.”

We also asked if the activity had led to any other interactions with students. Slightly more than half of the respondents reported not having further interactions. However a significant minority of the students noted that the interactions in the form of reading or creating comments was both useful and enjoyable, as illustrated by a student who remarked

“I felt I was not alone as a mother-student wanting to move towards a career. . . I was excited and inspired that I was ahead of the game in many aspects and perfect towards my goals. I felt I had similar challenges about family involvement and direction.”

However, others found that the activity to be superficial as shown by a student who commented:

“I found this social networking activity not to serve its purpose. . . mandating interaction in such a limited way seemed to result in students making the minimum possible contribution to discussion. . . it was about getting the assignment done rather than engaging in an ongoing or very helpful way with the course content.”

Next, the questionnaire invited students to comment on the notable absence of the tutor (less teaching presence) and if this was a positive or negative feature of the activity. Of the 30 responses, 12 expressed a desire for more presence from the tutors citing need for constructive feedback and a desire to make a more personal connection to the tutor through engagement with their contributions. However a slightly larger number of comments (16) expressed a desire to not have more presence from the tutors, arguing that the posters and their contributions were more free with less fear of judgment or public tutor assessment. One student also noted that:

---

**Figure 2: Students perception of amount of grade for activity**

The students were asked about the appropriateness of the amount of their final grade (5 percent) allocated to this social networking task. The large majority (84%) thought the mark was about right, 16% thought it was too little but none indicated that five percent was too much (figure 2). Student open-ended comments on this question were inclined to support more emphasis on the activity such as one who remarked “Increasing the value of using the activity would encourage students to explore it more and therefore see how valuable it really is.” Or another who commented: “It seemed like more of an annoyance for so little percentage. If it was worth more (say 10 or 15%) then I think I would’ve taken it more seriously and put more thought into it.”

We also asked if the activity had led to any other interactions with students. Slightly more than half of the respondents reported not having further interactions. However a significant minority of the students noted that the interactions in the form of reading or creating comments was both useful and enjoyable, as illustrated by a student who remarked

“I felt I was not alone as a mother-student wanting to move towards a career. . . I was excited and inspired that I was ahead of the game in many aspects and perfect towards my goals. I felt I had similar challenges about family involvement and direction.”

However, others found that the activity to be superficial as shown by a student who commented:

“I found this social networking activity not to serve its purpose. . . mandating interaction in such a limited way seemed to result in students making the minimum possible contribution to discussion. . . it was about getting the assignment done rather than engaging in an ongoing or very helpful way with the course content.”

Next, the questionnaire invited students to comment on the notable absence of the tutor (less teaching presence) and if this was a positive or negative feature of the activity. Of the 30 responses, 12 expressed a desire for more presence from the tutors citing need for constructive feedback and a desire to make a more personal connection to the tutor through engagement with their contributions. However a slightly larger number of comments (16) expressed a desire to not have more presence from the tutors, arguing that the posters and their contributions were more free with less fear of judgment or public tutor assessment. One student also noted that:

---

Open Praxis, vol. 7 issue 1, January–March 2015, pp. 7–23
“I like that tutors were not active in the group site, as it gave students the opportunity to lead the discussions while not subconsciously looking for reinforcement, of approval, from the tutors. It is also nice to have fellow students explain concepts, as this is a valuable part of the learning process and keeps students engaged and interactive.”

Figure 3: Recommended use in other university courses

The final survey item asked students if they thought this type of activity and the Elgg-based social system should be used in other Athabasca courses (figure 3). Five students (19%) would not recommend this noting the challenges of navigating a new interface, challenges of information overload and concerns about privacy, time requirements and the persistence of comments beyond the course. Another 5 did not have opinions. However, the majority of students were positive with 21 of 31 (69%) students indicating support for increased use. A typical comment from those supporting more use was:

“Using the Landing for online courses is very helpful and I’d say it is almost necessary. Studying online without the benefit of classrooms and interactions makes it more difficult. Having the Landing allows connections.”

Student Contributions—Book Marks

Many of the students chose to create a bookmark that linked to a site or a resource on the Internet that they felt enhanced the course. During the one-year period ending in February 2014 there were 79 separate bookmarks posted. Slightly more than half (44) of the bookmarks elicited comments from other students and 20% of the bookmarks received 2 or more comments (ranging from 0–5 comments/post with an average of 1.1 comments/bookmark). A number of students had previously noted the value they place on other students comment on their contributions.

The contents of the bookmark annotations and related comments were analyzed using the Leximancer concept mapping tool (https://www.leximancer.com) to produce the concept map shown in Figure 4. Concept maps, which combine both qualitative and quantitative data in graphical presentation have been shown to be an effective way to summarize and identify relationships between emergent variables in complex data sets (Burke, O’Campo, Peak, Gielen, McDonnell & Trochim, 2005).
These concept maps demonstrate that the main ideas discussed were relevant to the course—therapy, theory, research, information and health.

We also coded the bookmarks using open coding to extract major themes. As expected with a contributed bookmark, the most common theme that emerged from the student annotation of the bookmarks related to their relevance to the course content and learning objectives. Comments such as “This article relates to our readings on Ethical Issues” or “This video is useful in understand the topics of unit two” or “These podcasts discuss several of the theories we learn about in this course.” Many of the annotations will be useful for further revision of the course as indicated by a student who before adding their own recommendation noted that “many of the theoretical resources we have available in this class require supplementation with very practical, situation-specific resources.”

The second most common theme was of the students making a critical comment on the bookmark resource which we defined as one supported by facts/references or experiences, rather than a simple judgment. For example a student brings in their own relationship to the resource “It reminds me that, as I study to become a counsellor that my transparency and vulnerability is something...”
that needs to be challenged, as well. In order to build quality relationships, with friends, family, clients, my vulnerability is key to their success and my fulfillment.” Or “This is possibly the most apt description of depression I’ve ever read, and in blog/cartoon format. For counsellors and/or clinicians who would like a more subjective and phenomenological description of what depression feels like for clients.”

Finally the third most common theme extracted from the bookmark annotations related to advice-giving from one student to another. This advice had one of two focuses—how the resource bookmarked could be used as a learning resource in the context of the course and secondly how the resource could be used in a professional context that the student was familiar. Thus, it demonstrates the important application of learning to both the course, but equally important to professional lives for which these students are currently engaged or preparing.

**Student Contributions—Discussions**

In addition to posting bookmarks, we analyzed student discussion and blog posts to assess student participation and interaction. Analysis of student posts and comments indicated that students used the discussion and blog features in much the same way without making a clear distinction between the two media. For this reason, we have combined both the discussion and blog post data. During the one-year period under study, students created 49 posts that generated 107 comments. The posts ranged from 69–1240 words with an average of 400 words per post. The posted comments ranged from 7 to 679 words for an average of 442 words per post. 62% of the posts received at least one comment and 54% receiving two or more comments. The total number of comments per post ranged from 0–17 with an average of 2.7 comments per post.

The contents of the discussion and blog posts were also analyzed using the Leximancer concept mapping tool. In the concept map shown in figure 5, we find the central themes centering on key terms such as therapy, therapist, clients, counselor, and work.

Emerging from the concept map of the discussion and blog data (figure 5) is an indication that students discussed themes relevant to the course, but that the focus of discussion tended to gravitate toward work- or career-related topics. This visual representation of the data is consistent with the pattern of themes emerging from qualitative coding.

Both discussion and blog posts were coded for major themes. Codes were further organized into two emergent theoretical constructs or categories: immediate and long range learning goals and concerns. Immediate goals and concerns were those that focused primarily on the discussion and analysis of course content, including specific questions related to understanding course concepts or concerns related to course outcomes. Long range learning goals and concerns included topics beyond the analysis of course material and assignments, such as practice and professional competency related themes.

Themes centering on immediate learning goals and concerns ranged from discussion of assigned readings and important concepts and ideas. Students often directly referenced the text, providing comments to support critical reflections, often testing assumptions presented by theorists:

“While Corey focuses on just the personal characteristics of good counsellors, Bernes takes a broader approach by describing 5 conditions that are critical to a counsellor’s success: history, personal characteristics, cognitive ability, rigorous quality academic program and major field exposure.”

This type of content-specific reference was encountered frequently in the discussion. Students frequently made connections between schools of thought and key theoretical concepts presented in the course readings. Moreover, student expressed understanding of theoretical concepts and their relevance to specific work related contexts. In addition to drawing inferences and making
connections, students also shared in both personal and the collective construction of metacognitive awareness—an awareness of themselves as learners navigating the course material and developing a deeper appreciation of a complex theoretical tapestry:

“This course is helping me see the bigger picture in a lot of ways that I missed before, or at least overlooked. How Adlerian theory grew out of psychoanalytic therapy and where Jung fits into the picture.”

“The resources posted and subsequent comments also indicate awareness of and appreciation of others in the course—something denied to independent study models of distance education. In a small way students shared struggles and triumphs of formal study with others.”

Moving beyond analysis of their personal learning experiences, students extended their personal metacognitive awareness to an even larger context that included visualizing the integration of learned concepts into formal practices:

“Looking forward, discovering that there are many more overlapping elements within these schools of thought will ultimately make it easier in the attempt to develop a unique therapeutic style. I think realizations such as this will aid in understanding the fluid and dynamic nature of therapy itself, regardless of perspective.”

In the discussion and blog spaces, students demonstrated willingness to critically analyze concepts and share understanding; however, in addition to these immediate goals and concerns, a consistent and dominant theme related to more distal goals and concerns emerged.

Open Praxis, vol. 7 issue 1, January–March 2015, pp. 7–23
Long-range goals and concerns, including the exploration of professional competencies, practices, and career pathways were frequent. Often students expressed practice related concerns so that woven into the discussion is a collective concern for how best to gauge workplace performance expectations:

“After reading some of the comments posted above, I see that many of us have concerns and fears that we won’t be able to do the job as counsellors, and please pardon me if I have misinterpreted your comments.”

“It is definitely something to think about and I think it’s great when others pipe in because we get more insight and ideas how to work with clients.”

Complementing the discussion of expectant professional competencies was a sharing of context-specific reflections. These reflections provided feedback as to how those students working in the field went about their daily routes as practicing therapists:

“At the end of the day, you need to leave work at work and enjoy your life. This took me a long time to learn, to put distance between myself and those I worked with.”

The process of sharing practice related experiences created learning opportunities for those with limited practical experience. Moreover, engaging in these topics of discussion provided opportunity for those currently working in the field to share important experiences and construct a deeper understanding of practice in various contexts, often confirming, challenging, or extending understanding. An example of this extending of contextual understanding was evident in student discussion of the institutional process and structures affecting career choices and pathways:

“I am curious as to how you feel about these differences in requirements across Canada and what sort of perspective you can offer as someone currently living in a different country. It is obvious that living in different parts of the world requires different “paths” to get to the same occupational destinations.”

“In a previous post I wrote that a B. Ed degree would be beneficial; however, I doubted whether it should be a requirement for the position of a guidance counsellor. In fact, my question is why a person with a B.Ed. degree is considered to be more fitting for a counselling position when people with a BSW, MSW or Masters in Psychology are not even allowed to apply.”

Overall, the discussion of the long term goals and concerns demonstrated willingness or, perhaps, a need, for students to work cooperatively, mapping out important career goals and objectives. It also demonstrates that students were willing to organize and guide the discussion to meet their perceived needs. This tendency for students to self-organize and explore concepts beyond the immediate needs of the course may indicate an important affordance of social software.

**Discussion**

**Role of Assessment for incentive**

The issue of rewards and incentives for student activity has long been a subject of sometimes heated debate among educators and researchers. Cognitive behavioural pedagogies note the important inducement to action that is associated with rewards. However, as Kohn (1993) observes, external rewards produce only temporary effects at best and, worse, serve to actively reduce or eliminate intrinsic self-directed motivation among students. In agreement with copious other research in the area (e.g. Ratelle, Guay, Vallerand, Larose & Senécal, 2007; Ryan & Deci, 2000, Sheldon & Krieger, 2007; Vansteenkiste, Simons, Lens, Sheldon & Deci, 2004) Kohn (1993) notes there is an inverse relationship between intrinsic motivation and extrinsic motivation: the more we reward or punish, the less intrinsically motivated individuals become. Breaking out of this vicious circle can
be difficult. Distance education has long been known to have relatively high number of students described as “instrumental” or motivated in their study by a strong desire to do only what is necessary to complete the course (Richardson, 2013; Harper & Kember, 1986). Thus, it is no surprise that a number of students noted the need to reward with marks commensurate with effort required. We also note that the archive and discussion postings were least valued for their contribution to writing term papers and for studying for tests. We have seen in other cases using this Landing system and our Moodle LMS that participation in optional, un-assessed discussions or artifact sites is very limited. It appears from this study, then, that any innovative activity that requires student effort should be recognized in the assessment structure for the course. The activity, though valued by the majority of the students, still sits outside of the main assessed learning activities of the course and there is insufficient constructive alignment between the tasks and the assessment regime to make this more than a means to achieve a few percentage points in the marking scheme. It will likely not become more highly valued unless it is integrated and plays a larger part in the course either through direct assessment or as a means for achieving success in other more highly assessed activities. There are alternatives. Students might be given greater control such as, for example, allowing them to have greater flexibility over how they are assessed or the evidence they present of having met learning outcomes. For those that recognize the value in these activities and who go the extra mile, they might ask that their extra effort is recognized by grades. Alternatively, the work produced and conversations engaged in might be used as the basis for later assessments, bringing greater constructive alignment to the activities.

Value of Activity

From the qualitative analysis of the student discussion and contributions and the emergent themes, we found students were participating on two levels, relating to both immediate and long-range concerns. We found that on one level, students participated in the sharing and co-construction of knowledge related directly to the course and course materials, albeit under very constrained conditions and clearly more for marks than for the innate value of doing so. Further to this, students demonstrated a willingness, albeit under duress, to share and co-construct understanding of their learning or metacognitive processes and understanding. At the most basic level, we see this demonstrated in the discussion of the course text or paraphrasing ideas within the text. At a much deeper level, students shared more holistic perspectives of changing conceptual understanding and growth in learning. The themes of long-range concerns and goals suggest a willingness on the part of the learners to engage in the collective process of mapping out career choices and pathways beyond the course. Students without work-related experience in the field shared concerns while field practitioners shared experiences and made comparisons across contexts, engaging in a process of validating and gauging understanding expectant competencies for future practice. While much of this sprang from the design of the exercise, much of what was shared was neither planned nor anticipated by the creators of the course. It shows the beginnings of self-organization though, likely due to the demotivating effects of the extrinsic control exercised by the course designers, this seldom spread beyond the course boundaries.

It is conceivable that the emergent themes can perhaps be viewed as an attempt, on the part of the students, to engage in an exercise of individually and collectively building self and collective efficacy (Bandura, 1997). From this perspective students can be understood as building confidence and understanding of themselves as students of theoretical concepts and practitioners effectively weaving theory into practice. Moreover, beyond this, student’s interactions may be understood as a collectively building understanding of a career pathway forward. This collective attempt at way finding, a central theme of the discussion, may suggest that students are engaged in an effort
to alleviate self-doubt. We note, however, that this may have simply been for marks, given the constrained nature of the tasks performed, and the absence of engagement by most after the accreditation requirements had been met suggests strongly that this did not become a way of being for the students so much as a chance to stand back and reflect for a moment in a shared context. In itself this is worthwhile, even though it appears not to have been a transformative experience for most participants.

Our analysis of student discussion also indicated there is potential to leverage social software space to alter student experiences of learning at a distance. Students who may not have the advantage of working in a context related to the topic of study may be supported by vicariously sharing in the experiences of others who have a richer contextual understanding of practice. Moreover, the creation of such spaces may prove to be an effective strategy in fostering a greater sense of connectedness among learners. While this may have been achieved using the more controlled Moodle environment, which can equally well be used for discussion and sharing, the value of having a shared, controllable space where teacher presence is perceptibly lower seems to have been important to many students.

A final observation emerging from our analysis of the discussion data concerns the affordances of the social software and learning context. In a sense, our presentation of emergent themes which are connected, but, nevertheless, somewhat of an appendage to what might be the central concerns of navigating the course content and effectively demonstrating understanding in order to meet the stated learning outcomes of the course. As such, the bulk of discussion engaged in on the Landing site can be viewed as an expansion of the scope of context—a process that points to the potential for enhancing online learning spaces with social software. We observed the learning that goes on in these extended networked spaces and how they can be leveraged in the design of distance learning. We might liken this to the sorts of topics and ideas discussed in informal contexts at a bricks and mortar campus, which may be useful and relevant to the larger learning context but which are not specifically connected to the learning outcomes of a course.

**Teaching Presence**

Much of the current literature in distance education is dominated by 2nd generation constructivist pedagogy in which teacher presence is very highly valued. Indeed the most popular educational model in at least paced forms of distance education is the Community of Inquiry Model which presents teaching presence as one of the three critical elements necessary for “deep and meaningful learning” to occur (Garrison, Anderson, & Archer, 2010). Thus, this case provides a very interesting counter example of the value of teaching presence. Certainly the teaching presence is visible in both the design of the learning activity and in the summative assessment of the activity, but notably absent in the components of teaching presence related to encouraging discussion, direct instruction or in diagnosing misconceptions of students. As noted students had mixed feelings related to this absence, but the slight majority of students who responded to the questionnaire enjoyed not having any teacher presence. Obviously, the reduction in teaching presence serves to alleviate the fear of teachers that social network use in courses will substantially increase their workload. This case also gives positive example of use of self-directed contributions and comments that are building blocks for knowledge construction in connectivist pedagogies (Siemens, 2005). However, we should sound a note of caution: while teachers may not have been particularly visible and some aspects of the traditional teacher role were missing, teaching presence was still in evidence, in the design of the tasks, in the construction of the environment, and in the assessment of the activities. Teachers may not have been engaged directly, but their influence was ubiquitous.
and the fact that many students appeared to write with teachers in mind shows that they were seldom far from students’ minds, yet they were also paradoxically outside of the direct discourse on the Landing. It is also important to remember that these students were self-selected to engage on a distance education program that still largely follows an independent study paradigm, so lessons may not transfer well to other contexts.

**Connectivist Pedagogy**

Two of the most important components of courses that employ connectivist pedagogy are the opportunity to build and nourish networks and the capacity to create, share and enhance artifacts. This case study provides ample evidence of the latter but only minor evidence of the former network building activities.

The number of bookmarks created, blogs and discussion posted and files uploaded gives evidence that artifact creation was vibrant and visible. Many of the students commented in the responses and in the questionnaires on the value of both the resources identified and the comments provided by others. The large majority of the contributions were shared only within the private group context, but students were given the opportunity to expand that access easily if they chose to speak to a larger audience. The artifacts persist beyond the end of the course and thus can be revisited, searched or commented upon even after graduation.

As regards new network formations more than half the students reported no further activity with other students than the required comment on a contribution. Perhaps this relatively short and relatively low valued activity (5% of mark) militates against the need for or opportunity for more robust or extensive network formation among students. In addition, students may be responding to a person who has left the course months ago which also militates against strong network formation. Nonetheless, for those students (a minority in this case) who are program students continuing on to additional courses at the University, we can easily imagine networks forming based on even this limited but potentially ongoing interaction that could extend beyond the course to the department, faculty or university level.

**Set based education**

The learning activities in this case study could be classified as neither group-like, nor network-like activities but rather set-like activities (Dron & Anderson, 2014b). A “set” of students was created and tasked with curating resources for use and learning by the “set” of other students enrolled in the course, whether concurrently or in the future. While group norms, rules and processes played a significant role, these students were bound more by shared membership of a set than the communal activities of a focused, coordinated group. Thus, like more popular Learni.st or Pinterist sites or even the set of people who edit Wikipedia articles, this learning activity is much less personal than group or network activity. However it clearly provides an example of “set” organization with promise of emerging as an important new social aggregation for both formal and informal learning. When a student uploads a file or a bookmark his or her contribution and annotation serves to add value to the resource and customize it for the set of other students. If the contributor adds appropriate tags to the artifact, it can be searched for and aggregated and displayed in tag clouds to help other students find and assess it. The students who are notified by the system that a new artifact has been added are free to add value with a short comment, or to indicate that they “recommend” or value the comments. These recommendations are then tallied as a way of crowd-filtering the artifacts for quality. Finally the system shows the number of students who have visited the resource- a form of implicit recommendation.
Role of the environment

We have already observed that there appeared to be some value to a significant number of students in having a shared space where teacher control only extended to setting the broad context for the tasks, and shaping the environment to suit. Given that some students had some difficulties using a new and quite different interface, it may have been easier and more practical to simply create a new Moodle space for these interactions to occur. However, the Landing offers some features that Moodle cannot. The clear separation between the Moodle space, where teacher presence is ubiquitous, and the Landing, where everyone is equal (at least in terms of their ability to use the toolset) resembles the difference between a classroom and a common room or tutorial room booked by students to work together. The separation of environments appeared to give permission for different kinds of interaction to develop. Moreover, 57% of students explored further than the confines of the group, exposing them to different perspectives, ideas, and other people.

The fact that there was little or no difference between how students treated blogs and discussion forums, using both in almost exactly the same way, surprised us. In an Elgg environment they do resemble one another closely, especially in a group context where the fact that a blog is fundamentally a publication medium, owned by its author, while a discussion is owned by everyone that participates is less apparent than in a personal blogging context. Given the constrained nature of the activity, it seems likely that a sense of ownership and personal agency that characterizes blogging was simply not there: blogs belong to the group, not to the individual. It would be interesting to explore the effects of either providing training beforehand that makes the distinction clearer, or of following a more connectivist path of encouraging personal blogging, aggregated via bookmarks or, better, tags in the group, to encourage a deeper sense of ownership.

Recommendations for Practice

We are developing new pedagogies (connectivism), using new tools (web 2.0 network enabled toolsets) while working with students with large variations in their network literacy (Bullen, Morgan, & Qayyum, 2011). Thus there is a great deal of learning required by all of us. Social networks only acquire value as they are used—if they are not used, they have no value and, if they have no value, they are not used. Thus, the Elgg-based environment that we have created suffers, like all such installations, from a cold-start problem. The more it is integrated into the teaching, learning and administrative activities of the university, the more value it will have. Thus, our first recommendation is that teachers, designers, administrators, student union leaders and other members of the distance education community make the effort and take the time to both add and reap value from this type of social networking toolset. There is no need that interactions be limited to a single course and we envision a time when groups, nets and sets will flourish at informal friend, student club, department, faculty and university administration levels.

We next note that the archive of contributions from the students will grow over time and that a certain degree of organization and effort is required to curate the archive so as to gain maximum usefulness and value. Students can be instructed to tag their contributions effectively, to organize files and bookmarks into subject matter folders and to recommend artifacts that they find of particular value. These tools help future students to self-organize the archive and prevent information overload. However, some tasks must be done by group owners—likely the teachers. These tasks include deleting postings made by accident or moving artifacts placed in the wrong folders or locations. The group owner should also be aware of the new features being added to the toolset and make effort to be a competent user of the system. We often liken the group owners’ task to be like that of a gardener. Occasional weeding, moving, reorganizing, maintaining tools and the time to undertake these tasks are required in the garden. Tossing seed on the ground in
the spring and expecting to return in the fall for a bountiful harvest is unrealistic both in gardening and network curation. But the tasks and the time required are not so onerous so as to discourage millions of gardeners and curators!

**Recommendations for Further Research**

This type of design-based research typically generates more questions than answers. We list below some of the research questions that arose:

- Is there any effect between course size and connectivist (set-based) interactions? Can the benefits be scaled?
- How can the activity be compelling, but not compulsory so that students are motivated to contribute exclusively by external rewards?
- How can the learning activity by varied to both encourage and support more adventurous activities such as wiki based joint authoring, use of asynchronous interaction tools such as Voice Thread and other multi-media, asynchronous tools and creation (not merely linking to) web based learning resources?
- Assessing the effect of increasing value (through marks) and/or through integration with exams and other learning activities of the networking activity.

**Conclusion**

This case study has shown that modest amounts of social interactivity can be added at relatively low cost to self-paced courses. The addition adds opportunity for students to acquire social-media literacy network literacy and build some social capital in courses that were initially designed for strictly independent study. The design of the activity, with constrained teaching presence and clear assessment rubrics allowed the intervention to be managed efficiently, with little negative impact on tutor workload. The activity did not suit all students in this investigation, but it must be borne in mind that these students have chosen to take undergraduate courses from this university in expectation that they will be developed and delivered for independent and self-paced study.

This case study demonstrates that self-paced does not necessarily mean independent study. It also shows that intense constructivist group learning is not required and that network and especially set based aggregations may be a more effective way to retain the freedom of self-paced programming, while at the same time allowing for the formation of valuable and potentially enduring educational networks and sets that support non-coercive student learning interactions. We had hoped to inspire and see more networking activities in line with connectivist pedagogy. However, we are reminded that the technology used in a course must always align with and support other components of the course design- notably assessment and learning activity assignments.

**References**


Papers are licensed under a Creative Commons Attribution 4.0 International License

Open Praxis, vol. 7 issue 1, January–March 2015, pp. 7–23
Rhizo14: A Rhizomatic Learning cMOOC in Sunlight and in Shade

Jenny Mackness
Independent Education Consultant and Researcher (United Kingdom)
jenny.mackness@btopenworld.com

Frances Bell
Itinerant Scholar (United Kingdom)
frabell@gmail.com

Abstract
The authors present findings from the first stage of research into a “home-grown” connectivist MOOC, Rhizomatic Learning: The Community is the Curriculum (Rhizo14). We compare the surface view of the MOOC that has been presented in a range of open blog posts and articles with the view from beneath the surface that we have found in data we have collected (some anonymously). Our analysis reveals a positive, even transformative, experience for many participants on the one hand, but some more negative experiences and outcomes for other participants. These findings highlight the need for further research on the ethical implications of pedagogical experimentation, interrelated processes of community and curriculum formation, the role of the MOOC convener, and learner experiences within MOOC communities. In this paper we report on the alternative experiences of Rhizo14 participants and identify issues that we will explore in deeper analysis in forthcoming publications.

Keywords: Massive open online course (MOOC), rhizomatic learning, ethics, learner experience, teaching, Rhizo14

Introduction
Higher Education is in a state of flux: perhaps it always has been. Education is framed as a means of change through changing people and society, but is also the subject of change when it is characterized as “broken” and in need of transformation (Fullick, 2014). Will education be reformed, transformed or deformed, or a little of all three? Into this state of flux have emerged Massive Open Online Courses (MOOCs): first the connectivist MOOCs (cMOOCs) like CCK08, later the xMOOCs. With the proliferation of MOOCs since 2012, commonly referred to as the year of the MOOC (Watters, 2012), there has been an increasing output of published research into the MOOC experience (Haggard, 2013; Gašević, Kovanović, Joksimović & Siemens, 2014; Liyanagunawardena, Adams & Williams, 2013; Yousef, Chatti, Schroeder, Wosnitza & Jakobs, 2014). Much of this research has been into xMOOCs, i.e. MOOCs which have taken a traditional pedagogical approach to teaching and learning (using video lectures, readings, quizzes, tests, discussion forums) and moved it into open online learning environments. There has been less research on cMOOCs which were originally designed to challenge traditional approaches to teaching and learning by experimenting with a new pedagogical approach (Haggard, 2013; Gašević, Kovanović, Joksimović & Siemens, 2014; Liyanagunawardena, Adams & Williams, 2013; Yousef, Chatti, Schroeder, Wosnitza & Jakobs, 2014). A recent cMOOC, Rhizomatic Learning: The Community is the Curriculum (now known as Rhizo14) took an experimental approach to teaching and learning. Designed with Deleuze and Guattari’s (1987) principles of rhizomatic thinking in mind, it sought to challenge traditional conventions normally
associated with hierarchical notions of course, curriculum and teaching/facilitation, whilst adhering to cMOOC principles of autonomy, diversity, openness and interaction. These challenges and the design of the MOOC led to participants having very different experiences of the MOOC. The Rhizo14 MOOC therefore provides an opportunity to explore the effects that experiments with pedagogy might have on the learner experience.

The authors of this paper were participants in Rhizo14. Both authors have prior experience of learning in cMOOCs having been participants in, and authors of published research about CCK08, the first MOOC about connectivism and connective knowledge (Mackness et al., 2010; Bell, 2011). Despite this we were struck by the contrasts between Rhizo14 and our prior experience. There were plenty of learning moments and evidence of joy and creativity, but we also experienced and observed some tensions, clashes and painful interactions, where participants seemed to expect different things from the course and were sometimes disappointed by the actions and behaviours of other participants. Our curiosity was piqued; we wanted to know what was going on beneath the surface and how a range of participants were experiencing Rhizo14.

Because this is a negative starting point we were very conscious of the dangers, ethical and for research quality, of generalising from our own experiences as participant observers. We therefore initiated a carefully thought through but emergent research process and collected data that, though limited to participants we could find and engage, shows a more complex picture of Rhizo14 than the view presented publicly to date (Cormier, 2014a; Bali & Honeychurch, 2014). This reveals both the “light” and “dark” sides of participating in an experimental MOOC such as Rhizo14 and validates the process of exploring dominant and alternative views.

Our findings from an analysis of participant experiences also raises issues that align with concerns raised in recent reviews of MOOC research (Liyanagunawardena et al., 2013; Yousef et al., 2014); principally that there has not been enough attention paid to the ethical implications of MOOC or the role of the convener/teacher/facilitator and not enough research into learner experience in cMOOCs, particularly with respect to social interaction and community building.

In this paper we focus on the alternative perspectives of participant experience in Rhizo14 and begin to consider the ethical implications of experimenting on MOOC learners. In future papers we will further explore the role of the MOOC convener, the community and curriculum in a MOOC and the rhizome as a metaphor for teaching and learning.

Rhizo14—the context

Rhizomatic Learning: The Community is the Curriculum (Rhizo14) was an open course, convened by Dave Cormier in January 2014 to explore the possibility of open learning and provide a space for considering rhizomatic learning (Cormier, 2013). Officially the course ran for 6 weeks from January 14 to February 25. Unofficially it continued another six weeks until April 17; during this time course participants independently continued to discuss topics of interest both in the course site (P2PU) and on Facebook.

Rhizo14 attracted more than 500 participants. The exact number is not known; many participants did not formally register for the course. No demographic data was collected, but our participant experience indicates a diverse mix of people from across the world, from schools, further education and higher education and with different levels of experience of MOOCs and open learning (Mackness, 2014a).

The course was (fairly) massive, open access and free (no entry fee or barriers) and therefore a MOOC. It shared many of the characteristics of the original connectivist MOOCs (cMOOCs). Participants worked across distributed platforms of their choice, e.g. P2PU, a Facebook open group,
Twitter, a Google+ community, participant blogs, and cMOOC activities were promoted—aggregation, remixing, repurposing and feeding forward. cMOOC principles of learner autonomy, diversity, openness and interaction were essential to the course.

Despite these similarities with the original cMOOCs Rhizo14 differed from them in some significant respects. The intention was that the community would be the curriculum. There were no course objectives and virtually no course content was provided (Cormier, 2014c). The course was designed around weekly provocative statements and questions as follows:

- Week 1—Cheating as Learning (Jan 14–21)
- Week 2—Enforcing Independence (Jan 21–28)
- Week 3—Embracing Uncertainty (Jan 28–Feb 4)
- Week 4—Is Books Making Us Stupid? (Feb 4–Feb 11)
- Week 5—Community As Curriculum (Feb 11–Feb 18)
- Week 6—Planned Obsolescence (Feb 18–?)

These topics were not pre-planned but were chosen “on the hoof” in response to weekly discussions and posted with very short (av.3min) introductory videos (Cormier, 2014b). Participants were then left to create their own curriculum.

Rhizo14 also differed from prior cMOOCs in that it was “home-grown.” Dave Cormier ran the MOOC in his own time, often convening the weekly Hangouts in the evening from his own home. Despite this, his intention was that there would be no centre to the course; he would be one of the participants.

In Rhizo14, Deleuze and Guattari’s (1987) notion of the rhizome as a metaphor for thinking was used as a metaphor for learning. The metaphor affected the design and learning in the course, which could be regarded as being at the extreme end of the c/x MOOC spectrum, where “c” in this case could mean complex, chaotic, and/or connected.

**Methodology**

This research was to some extent precipitated by concerns that we, the authors, have about our own and other participants’ experiences of learning in Rhizo14. As such, we are conscious of the dangers of finding what we are looking for in our research, as outlined by Stephen Downes in his presentation on MOOC Research (Downes, 2014). In outsider research where researchers see themselves as outside the researched situation, objectivity is a key element of the traditional science-based approach normally adopted. We were engaged in insider research, we became participant observers in Rhizo14. We acknowledge the danger of reduced objectivity and have taken measures to counteract it. We have also benefited from our subjectivity as researchers and the subjectivity of other participants who shared their views and experiences with us, being simultaneously insiders and outsiders (Dwyer & Buckle, 2009). Subjectivity can bring a significant contribution to research in complex situations involving people and their relations with material things and with each other, as we are “entangled in a web of relationships and practices” understanding agency as “a flow of forces in which the subject is continuously performed and performative” (Fenwick & Edwards, 2010, p. 21).

Our first steps were to declare that we were conducting research, and to engage with other participants (via a Google doc) on what would be ethical ways of using data in our research. Having consulted and planned our data collection, we shared this as widely as possible in all the spaces in which Rhizo14 was evident and on our blogs (Bell, 2014a; Mackness, 2014d).

Our research process developed organically. A representation of this is shown in figure 1.
Data collection

We participated in the MOOC as fully engaged participants and collated resources from the MOOC on a private wiki. These resources include Facebook threads, Twitter streams, annotated readings, discussion, survey results, links to videos and our own participant observation/reflection.

Following the MOOC we created a Survey Monkey survey related to a botanical drawing of a rhizome from which we wanted to elicit qualitative rather than quantitative data. The survey included 4 questions:

- How does the image of a rhizome relate to your prior experience of teaching, learning?
- How does the image of a rhizome relate to your experience of learning during Rhizo14?
- How might the image of a rhizome represent your future practice?
- If the above questions did not allow you to fully explain your learning experience in Rhizo14, then please comment in the box below on those aspects of the course which were significant for you, and what kept you in the course or caused you to leave early.

We posted the link to the survey on Facebook, in the Google + group, on our blogs and on Twitter. The link was also sent to all P2PU participants by Dave Cormier. In an attempt to ensure that we reached as many participants as possible, not only those who were still active at the end of the course, we identified non-registered participants and bloggers and sent them individual invitations to respond to the survey. Most importantly, the survey allowed for anonymous responses.

It is difficult to know exactly how many people the survey reached, but we received 47 responses and more than 30,000 words of data. Following this initial survey we sent out further questions by email to 35 survey respondents who agreed to receive these follow up questions. These respondents were also asked an individual question which sought clarification of their original survey response (Mackness, 2014b).
The final stage of data collection was a Skype interview with Dave Cormier, convener of the Rhizo14 MOOC. A summary of the outcomes of this interview was posted at Bell (2014b).

As well as being mindful of and explicit about our roles as researchers, we are very conscious of the partial nature of the data we have collected and have analysed. The distributed nature of the spaces, the mix of public / private, and the number of survey respondents (47) combine to remind us that we must be missing some important perspectives. What does encourage us is that despite this partial view, our decision to allow for confidential and electively anonymous responses to our surveys, has enabled a light to be cast on what people are thinking, and not saying, in public and semi-public forums. This research will make a contribution to the hidden MOOC experience.

**Literature that informs this research**

Although the quantity of published research papers into learning in MOOCs is increasing, this research area is still in its infancy. Gašević et al. (2014) report in their review of MOOC research that much of it to date has been lacking in sufficient methodological and theoretical rigour. Liyanagunawardena et al. (2013), report a lack of reference to ethics in much of the research literature.

Given that many MOOCs, particularly cMOOCs, could be regarded as pedagogical experiments, i.e. trying out new approaches on participants, then ethical behaviours in relation to teaching and learning within MOOCs and consideration of ethics in MOOC related research must be part of a rigorous methodological and theoretical approach. With academic freedom comes responsibility (Marshall, 2014). This responsibility relates to both the collection of data from learners (Prinsloo & Slade, 2014) and the tension between innovation/ experimentation and a basic teaching and research principle of “do no harm.” The vulnerability of learners must be recognized by both teachers and researchers (Markham & Buchanan, 2012; Barnett, 2007).

In addition to the need for a more ethical approach to teaching and research in MOOCs Liyanagunawardena et al. (2013) and Yousef et al. (2014) have pointed to further gaps in current research into MOOCs. Liyanagunawardena et al. (2013) suggest that the creator/facilitator perspective is not being widely researched. This was also noted by Kop, Fournier and Mak (2011). Yousef et al. (2014) note the research emphasis on “top-down, controlled, teacher-centred and centralized” MOOCs, i.e. xMOOCs. They say that “Attempts to implement bottom up, student-centred, really open and distributed forms of MOOCs are the exception rather than the rule” (Yousef et al., p. 16). More research is needed into learner experiences, especially in these “exceptional” MOOCs.

With respect to learner experiences, Gašević et al. (2014) have highlighted the importance of socialisation in MOOCs. This echoes the much earlier work of Wenger (1998) on social learning theory, the even earlier work of learning theorists such as Vygotsky, as well as the work of Garrison, Anderson and Archer (2000) on social presence in online environments. In the Homenet study, links between social isolation and Internet use dissipated over time (Kraut, Kiesler, Boneva, Cummings, Helgeson & Crawford, 2002). In online learning, social isolation is contextual to the course/learner experience (Haythornthwaite & Kazmer, 2001). In MOOCs, opportunities for establishing trust can be limited because of their shorter duration (Gašević et al., 2014). The question of what constitutes significant socialization and interaction therefore becomes an important area to research.

Brinton, Chiang, Jain, Lam, Liu and Wong (2013) found that in the early stages of a MOOC much of the discussion is small talk or chatter that does not relate to course content and that this small talk is a major source of overload in the forums. This led Eynon, Hjorth, Yasseri and Gillani (2014) to question how meaningful and successful learning in a MOOC can be recognized and how “the
invisible rules that forum discussions encompass" are understood. Gillani, Yasseri, Eynon and Hjorth (2014) recognise the importance of group dynamics in MOOCs and that interactions at group level are important for learning. Their findings suggest that the structure of MOOCs and large-scale crowd-based learning can limit communication between learners. A small proportion of very vocal participants can significantly influence the discussion and “modularity in MOOC forum networks appears to ‘trap’ information in small learner groups” (Gillani et al., 2014, p. 6). Milligan, Littlejohn and Margaryan (2013) found that active participants are key to the success of a MOOC, but suggest that course facilitators should design courses that support a diversity of learners.

Current research therefore suggests that the learner experience and how learners interact in MOOCs is not well understood and the high drop out rate from MOOCs has been widely reported. This has implications for diversity (Mackness, Waite, Roberts & Lovegrove, 2013). As the numbers drop, diversity decreases and it becomes increasingly difficult for some learners to sustain their weak connections. Yang, Sinha, Adamson and Penstein (2013) have noted that MOOCs do not develop in the same way as better understood online communities, but tend to “grow in an unruly manner” and lack shared practices. The original cMOOCs, based as they were on connectivist principles, were never intended to foster the development of communities. Rather they emphasized learning in networks. At the time, Downes (2007) was clear about the difference between groups and networks and why the principles of connectivism were the principles of learning in networks. More recently, in a comment on Tony Bates’ blog, Stephen Downes has written: “the two play different roles: the communities embed knowledge and standardize practice, while the MOOCs disrupt existing patterns of thinking and introduce people to new connections and new ideas” (Bates, 2014a). Wenger, Trayner and de Laat (2011) have also distinguished between the different purposes of networks and communities. However, Kop et al. (2011) highlighted the importance of social and teaching presence, support structures and the creation of community in MOOCs (see also Kop, 2011) and more recently, MOOCs from both ends of the c/xMOOC spectrum have been attempting to combine both learning at scale (the massiveness of networks) with community building. Examples of this are Coursera’s MOOCs, Modern and Contemporary American Poetry (ModPo) and E-Learning and Digital Cultures (EDCMOOC), and Rhizo14. Jeremy Knox (2014), a convener of the EDCMOOC found in his research that if a MOOC is designed to obviate the need for tutor presence, then participants try to “replace the need for a teacher with the necessity for community” (Knox, 2014, p. 172).

If MOOCs are thought of as communities, how do educators position themselves in these learning environments? Ferguson & Whitelock (2014) have researched this and have found that educators in MOOCs outline “the trajectory of the course, acting as both host and instructor, sometimes as fellow learner, and often as an emotionally engaged enthusiast” (Ferguson & Whitelock, 2014, p. 563). Others have observed that the role of the educator in relation to MOOCs is changing (Masters, 2009; Cormier & Siemens, 2010; Johnson, Adams, Cummins, Estrada, Freeman & Ludgate, 2013). Educators in both xMOOCs and cMOOCs are taking a minimal intervention approach (Rodriguez, 2012). xMOOCs achieve this through distant charismatic, celebrity professors and automated responses; cMOOCs achieve this through teachers who adopt a facilitator and co-learner role (Ross, Sinclair, Knox & Macleod, 2014). Biesta (2013) claims that “teaching is more than facilitation and that teaching matters, that teachers should teach and should be allowed to teach” (Biesta, 2013, p. 36). But Ross et al. (2014) point out that what it means to teach and learn is as much a mystery as it ever was, never mind in a MOOC and measuring success in a MOOC remains an elusive endeavour. “There is more complexity and variation in the notion of the teacher than MOOC debates and literature have yet engaged with” (Ross et al., 2014, p. 61).
If the role of the teacher in MOOCs needs further research, so too does the meaning of the word “course” in particular in relation to content in a course. xMOOCs have taken traditional courses, with video lectures, readings, tests, a weekly structured syllabus and so on and put these courses online (Bates, 2014b). In cMOOCs the focus is less on the content and more on “how” to learn through networking and connectivity. Participants in these MOOCs play a significant role in content creation. “Teaching is subordinate to learning in a connectivist MOOC” (Ross et al., 2014, p. 60) and the community is the curriculum (Cormier, 2008). Despite this learners need some sense of coherence in content and conversations (Cormier & Siemens, 2010) even if it is agreed that MOOCs are “a large public experiment exploring the impact of the Internet on education” (Siemens, 2012, n.p.).

Rhizo14 was such an experiment and provides an opportunity to explore and address some of the gaps that have been identified in current MOOC research. Of particular interest in relation to our research into the Rhizo14 MOOC are the ethical implications of experimenting on learners, the role of the facilitator, socialization, group dynamics and the impact of community on learning in MOOCs and how course, content and curriculum are understood in MOOCs.

The light and dark sides of Rhizo14

Rhizo14 was a connectivist MOOC. It fulfilled many of the characteristics of cMOOCs. It could be considered to be on the extreme “c” end of the c/x MOOC spectrum (Haggard, 2013; Rodriguez, 2012; Bates, 2014b) because unlike prior cMOOCs, the course was designed to have no centre. It was also designed to have no content or assessment; the community would be the curriculum. Dave Cormier was the course leader: his intention was “to invite a bunch of people to a conversation about my work to see if they could help me make it better” (Cormier, 2014b, n.p.). The course was about rhizomatic learning (Cormier, 2008). Ideas related to rhizomatic learning stem from the metaphor of the rhizome and some of the principles of rhizomatic thinking outlined by Deleuze and Guattari in their book *A Thousand Plateaus* (1987); principles such as Connections—a rhizome ceaselessly establishes connections and affords multiple points of entry; Heterogeneity—any point of a rhizome can be connected to any other and must be; Multiplicity—a multiplicity is, in the most basic sense, a complex structure that does not reference a prior unity and requires no central pivot point, being a-centred and de-subjectified; Asignifying rupture—if you break a rhizome it can start growing again on its old line or on a new line. Connections are constantly breaking (deterritorialisation) and reforming (reterritorialisation); Cartography and decalcomania—the rhizome is like a map and not a tracing. You can enter a rhizome at any point. Maps are always unfinished and subject to revision. These principles, whilst not discussed in relation to Deleuze and Guattari during the course, were nevertheless influential in the way in which the course was designed and experienced.

In these terms Rhizo14 was unlike all prior xMOOCs and cMOOCs. It was therefore an “exceptional” experimental course (i.e. an exception to prior MOOCs) and as such warrants focused research (Yousef et al., 2014).

Our survey and interview responses have revealed that for many participants Rhizo14 was a very positive experience. Many participants valued the metaphor of the rhizome for teaching and learning. Quoting from survey responses, participants of the Rhizo14 course thought that teaching and learning based on this metaphor is “subconscious,” “subterranean,” “subversive,” “a non-linear, multi-directional underground web of connections.” Learning is “haphazard,” “messy,” “serendipitous,” “esoteric,” “dynamic,” “unbounded,” “unpredictable,” “adaptive,” “self-organising” and “non-hierarchical.” In the words

“The rhizome metaphor gives me a new way of framing education, exploring education, and thinking about education” (survey respondent).
These participants valued the “lack of a centre,” i.e. the lack of traditional tutoring and the lack of prescribed content. They valued the high emphasis on learner autonomy, self-organization and handing over control to learners. The course challenged traditional hierarchical modes of thinking about education and deconstructed formal rules of learning. They valued their perceived liberation from the arborescent structures of education institutions, classrooms and curricula. There was a sense of freedom that led, as one participant noted, to “movement, spontaneity and creativity,” such that the course was experienced as a spirit of exploration, openness and experimentation. These were thought to be important aspects of Rhizo14.

For these participants and for the authors, as participant observers, this sense of excitement was palpable and was visible in activity on the web site and across a range of social media spaces, particularly the Facebook group which continued to remain very active for weeks after the end of the course and remains open. A survey respondent remarked “I became fascinated by really excellent discussions and I found the enthusiasm of some of the younger teachers and researchers infectious.” For some the course promoted deep and wide learning, was transformational and had a positive impact on classroom practice. This was the “light” side of Rhizo14.

There was also a “dark” side for those participants who did not feel connected and could not find a voice in the community. Whilst the majority of our survey results were positive, the possibility for anonymous returns meant that the voice of participants who experienced the “dark side” could be heard. In MOOC research it is difficult to gain access to these voices since “open access” also means “open exit” and many participants “vote with their feet” and are difficult to contact following their departure. This has been noted by many researchers who have published MOOC drop out data (see for example, Yang et al., 2013; Jordan, 2014).

The “dark” side of Rhizo14 related to many of the gaps in MOOC research that have been noted by other researchers and referenced in the review of literature. Rhizo14 participants for whom the experience was less than positive felt isolated. They felt unable to make meaningful connections despite in some cases being experienced “MOOCers.” One viewed the emphasis on community as an unnecessary pressure, which led to artificial effects, exclusion and limited learning. Another viewed the community as “disjointed networks of pre-established subgroups.” Another described the community as having a “dark edge.” These participants felt that there was a lack of appropriate facilitation, and that there were inappropriate exhibitions of power and politics in the course. Some felt that the course was based on weak philosophical foundations and that the rhizome is an empty signifier. Some questioned the lack of content in the course and felt that it lacked depth and theoretical discussion. For these participants the rhizome is “A pernicious, pervasive weed, rooted in a lot of dirt and “SH*****”, “...a ‘thug’ and can be very badly behaved”; “Part of one big family/plant—joined at the hip”; “Clones of the “same damn plant.” One respondent wrote

“I knew before that the arborescent paradigm was a problem. The rhizome is a contrasting alternative, but I learned in the course that this alternative has a lot of connotations with ugly and weed-like characteristics which are not necessary for every complex or even chaotic network” (survey respondent).

Rhizo14 as an experiment—ethical implications

Rhizo14 was designed as an experiment (Cormier, 2014c) and challenge to traditional ways of thinking about teaching and learning. There were no course objectives. In effect learners in this course were “lab rats,” as was recognized by one survey respondent.

“I have felt very ‘lab-ratty” at many different moments during rhizo14, and I mean that in a good way, and also in a critical way, meaning that I was aware that I was taking part in an experiment, a learning experiment. (...) For me, it was a journey within myself and how I function as a learner. I let myself be

Open Praxis, vol. 7 issue 1, January–March 2015, pp. 25–38
the ‘lab rat’, so to speak, to then take a step back and observe the big picture of the paths/directions I/rhizomes chose to follow/sprout towards, and that includes the people with which I most densely connected with and read and engaged most often” (survey respondent).

For this learner, being a “lab rat” was ultimately a positive experience, but as we have seen this was not the case for all participants. Another survey respondent noted that the psychological safety of participants should be of concern to the MOOC convener and wrote:

“Clearly, my personal, admittedly tacit understanding of cMOOCs has been that they are intended to be a relatively safe (psychological and intellectual) space for differing opinions and world views. My tacit understanding is also that those who have more visible positions in cMOOCs, either through overt or indirect facilitation and “leadership,” have both a high level of responsibility and a high (perhaps too high?) level of pressure to model and demonstrate, and perhaps even protect, this psychological safety and conceptual openness” (survey respondent).

The responsibility of the “teacher” was also discussed by Marshall (2014) in his paper on the ethical implications of MOOCs: “... we have a professional and social obligation to ensure that we are not abusing a position of trust and responsibility and acting, irrespectively of our wider goals and intentions, in an unethical manner” (p. 250).

The question of ethics in relation to MOOCs has been identified as a gap in the MOOC literature (Liyanagunawardena et al., 2014). Recent concerns have more often been related to the ethical use of participant data for research, but less has been written about the ethics of teaching in MOOCs. Marshall’s paper is an exception (2014). In this he raised a number of further concerns about the ethics and responsibilities of teaching in MOOCs. These related to the ethics of convening a MOOC according to personal interest and thereby introducing personal bias; the responsibility for being alert to the potential for some group cultures to become disempowering for other participants; the obligation to provide a learning experience which is likely to be successful for all, and the duty of care that educators have for their learners.

These ethical considerations, which were also raised as concerns by some Rhizo14 survey respondents have been given very little attention in MOOCs, although the ethics of teaching has long held an established place in educational literature, as exemplified by the work of Noddings, who as far back as 1984 wrote: “The primary aim of all education must be the nurturance of the ethical ideal” (Noddings, 1984, p. 6). For Noddings the ethical ideal is an ethic of caring.

The “massive” of MOOCs has necessitated a change in the role of the teacher, but nevertheless “The teacher persists in the MOOC: though reworked and disaggregated, the teaching function and teaching professionalism remain central” (Bayne & Ross, 2014, p. 57). We would argue that well-established ethical principles also persist. Some have argued that teaching in a MOOC is a shared responsibility between teachers and learners (McAuley, Stewart, Siemens & Cormier, 2010). If this is so, then it follows that well established ethical principles should also be adhered to by all participants of a MOOC, as was noted by one survey respondent who listed six rules of engagement for teaching and participating in MOOCs.

1. Do no harm
2. The expectation is that interactions will be mutually respectful
3. Provide and allow space for reflection
4. Ad hominem attacks should not be permitted as a method of discussion
5. There should be a duty of care or necessarily emotional labour on the part of those calling together/convening/organizing/providing these amorphous spaces
6. All cMOOC participants have a duty of care and nurture and responsibility toward others or for themselves, mitigating the need or desire to externalize (blame) their learning and experience on others.
These concerns were echoed by Lau (2014) who wrote of Rhizo14:

One of the key lessons that I have taken from my MOOC experiences is that regardless of how participatory the learning experience is designed to be, it is worthwhile for MOOC instructors or facilitators to be mindful that participants are likely to look towards them for guidance on behavioural norms within a MOOC—and that they have both the power and responsibility to model attitudes and actions that support the full range of voices in a MOOC to be heard (Lau, 2014, p. 240).

Conclusions

The Rhizo14 MOOC was an experiment, an experiment which for some participants was very successful. It was innovative and challenged hierarchical and traditional ways of teaching and learning. It encouraged learner autonomy and openness, a participant co-created curriculum, co-creation of knowledge and community building. However, alongside exciting, inspiring and transformational experiences, there were others that were demotivating, demoralizing, disenfranchising and even disturbing. Many participants acknowledged Rhizo14 as a seminal experience that has changed their teaching and learning practice: some had mixed feelings and experiences; whilst others dropped by, lurked in the background or melted away, as they felt increasingly disconnected.

To an extent teaching is always experimental, a research process in action. As long ago as 1975 Robert Stenhouse described classrooms as laboratories. Almost forty years later a Rhizo14 survey respondent reflects on being a “lab rat.” Education needs innovative, experimental approaches to teaching and learning, never more so than now in this fast changing digital age, but with innovation and experimentation comes increasing responsibility for learners. The will to learn is fragile (Barnett, 2007); a sentiment also reflected by a survey respondent: “You become a stranger to yourself so that you can later think yourself in strange terms…” There is a pedagogy of risk associated with treating teaching as an experiment (Mackness, 2014c). “There is an ethics of educational space, which has surely not been excavated” (Barnett, 2007, p. 146).

At this stage in our research, we can identify that adult learners, already immersed in formal education systems, can benefit from “doing” Rhizomatic Learning, forming community, and creating curriculum in a community setting. Educators can learn from their own experiences to change their professional practice but this is not always straightforward.

Our preliminary analysis has raised some issues that demand more detailed analysis and explanation if these benefits are to become available to a wider range of learners than those who experienced the “light” of Rhizo14. We are fortunate enough to have a wealth of data to inform further analysis.

In future writing, we will explore:

- Interrelated processes of community and curriculum formation in Rhizo14
- The positive and negative effects of emotion and alienation
- Moderation and leadership roles in the design and conduct of de-centred courses
- Distributed spaces, technologies and services in a multi-platform MOOC
- The rhizome as a metaphor for teaching and learning

cMOOCs, to date, have tended to focus on the processes and practices of digital and networked teaching and learning and have attracted professional participants who work in the education sector (Kop et al., 2011; Milligan et al., 2013). Critical analysis and reflection on cMOOC participant experience, which seeks to explore both the “light” and “dark” sides of learner experience in MOOCs, therefore becomes relevant to a wider constituency of learners. This paper reports on a first step to exploring these alternative perspectives and more complex issues related to learning in a MOOC.
Acknowledgements

We would like to thank Rhizo14 participants for providing such an interesting experience for our research, particularly those who freely gave their time to complete the survey and answer our questions.

References


Open Praxis, vol. 7 issue 1, January–March 2015, pp. 25–38


Papers are licensed under a Creative Commons Attribution 4.0 International License
Students’ and tutors’ perceptions of feedback on academic essays in an open and distance learning context

Jack Matlou Chokwe
University of South Africa (South Africa)
chokwmj@unisa.ac.za

Abstract
Feedback is the most important aspect of the learning and teaching process. Through feedback, tutors/lecturers provide an important intervention in teaching as students would always like to know where they did right or wrong in their written assessed work. Without feedback, learning is not complete. This article reports on the results of a major study on academic writing of first year English Second Language university students in open and distance learning context. The study probed both students’ perceptions and tutors’ practices in the provision of giving feedback. Marked students’ assignments were evaluated using document analysis method and interviews were held with students and tutors. The findings show that feedback provided to students is not always sufficient and therefore denying students’ opportunities to learn effectively as they would not know their weak and strong points.

Keywords: Open and distance learning; English for Academic Purposes; feedback; talkback; feeding forward; tutor-markers

Introduction
Feedback is very critical in learning and teaching. Without feedback, learning is like a ship without radar as there is no direction given to students regarding their written work. This study was qualitative in nature. In this study, data were collected using marked students essays by English for Academic Purposes students, as well as interviews with tutor-markers in an Open and Distance Learning (ODL) institution. The study found that marking of students’ assignments was not satisfactory and students did not benefit much from feedback. Amongst others, the article recommends a rigorous training of tutor-markers to ensure that they strengthen the weak link that exists in providing effective feedback to students in order to enhance learning and the teaching of writing. The article also recommends training of both staff and students to produce effective feedback and adequately respond to feedback, respectively.

Literature Review and Conceptual Framework
Academic writing is one of the most critical skills at university because most assessment tasks require a demonstration of learning through writing. As Lea and Street (1998) argue, one of the underlying assumptions of an Academic Literacies (AL) model is that educators need to be concerned with literacies more generally across academic contexts and focus not only on the assessed texts produced by students, such as the papers students submit for grades or examinations they take.

Several researchers suggest the use of effective feedback in academic writing pedagogy (Granville & Dison, 2009; Ferris, 2008; Li, 2007; Spencer, 2007; Weaver, 2006; Zhu, 2004; Cabral & Tavares, 2002; Saito, 1994). For instance, Weaver (2006) and Ferris (2008) concur that students should be shown their strengths and weaknesses so that they can improve on their future work. Weaver (2006) further states that some academics think feedback does not work as students are only concerned about the grade they receive from their assignments. She found that students were motivated to
improve when they received constructive feedback and also suggests that tutors should provide appropriate guidance and motivation rather than diagnosing problems and justifying the marks. Similarly, Saito (1994) suggests that English Second Language (ESL) teachers need to make explicit the purposes of their feedback so that students can know how to handle that feedback and use it to their benefit. Furthermore, Spencer (2007) suggests the following solutions to teaching and responding to academic writing, namely, teacher education where teachers are trained to effectively respond to student writing; adequate exchange of information by writers (students) and readers (lecturers/tutors); and that teachers should also be writers and teach writing as a process. However, Lea and Street (1998) found that tutors often gave vague comments which students were not able to understand and use effectively. The researchers above indicate the value of feedback in student writing. The article argues that feedback is one of the key cornerstones of sound pedagogy.

Time is the most critical factor in giving quality feedback to students. Bailey (2009, p. 1) indicates two challenges that tutors have regarding feedback, namely, less time to write comments on students’ work and fewer opportunities for tutorial interaction. The researcher concurs with Bailey’s observation as that resonates with what occurs at ODL institutions, particularly with the semesterisation and modularisation of courses. Boud and Molloy (2013) also attribute poor quality of feedback on semesterisation and modularisation. Bailey’s (2009) study found that students value feedback and need explicit language free of jargon for them to understand feedback clearly. In a nutshell, feedback should be unambiguous and make sense to students.

Some tutor feedback on student writing tends to focus mainly on the mechanical aspects of language and even students expect feedback to point out grammar aspects. Saito (1994) found that ESL students found teacher feedback satisfactory when it focused on grammatical errors. He indicates that many ESL students feel that they need more help with grammar and also thinks that the teachers’ responsibility is to model these aspects of English. He further argues that feedback that gives clues is more effective in helping students to revise than that (feedback) which is corrected (ibid). Similarly, Curry (2006) found that feedback on student writing focused on correcting surface features of language. Again, Radecki and Swales (1988) noted that learners expect error correction from their teachers and if they (learners) do not get that, they (teachers) may lose their credibility. In the same way, Fregeau (1999, p. 7) found that “surface structure correction was the most common type of correction used as an approach to teaching writing skills and language structure” and reports that it was not effective. She further reports that students felt that the types of responses they got were hypocritical and ineffective in improving their writing (ibid). Furthermore, Jackson, Meyer and Parkinson (2006) note that grammatical accuracy influences students’ marks to a lesser extent, and tone and style only marginally, and that feedback on student writing is largely in the form of brief written comments, with corrections of grammar also being common. However, Dowden, Pittaway, Yost and McCarthy (2013) report that students are sometimes irritated by feedback on grammar. So, most feedback to student writing puts more emphasis to aspects of grammar, while content which matter most takes the back seat. Although highlighting of grammatical errors is important in ESL contexts, it should not be the sole focus of feedback.

A talkback approach is suggested as a better way of communicating with students regarding their writing. Lillis (2006) suggests the shift from “feedback” to “talkback” in responding to student writing because talkback is considered to be student-centred. She critiques feedback as concentrating on student written texts as a product and a tendency towards closed commentary with evaluative language (good; weak). Furthermore, Lillis (2001) argues that talkback provides student writers with the opportunity to respond to, and to question, tutor comments as well as articulate their criticism of dominant conventions. She contends that talkback focuses on the students’ texts as a process, an acknowledgement of the partial nature of any text, an attempt to open up space where the
student writer can say what she likes and does not like about what she is expected to make meaning within (Lillis 2006).

Bharuthram and McKenna (2006) share the same view. Talkback appears to be a very interactive way of giving feedback where learners are engaged and asked deeper questions regarding their written work as opposed to just giving evaluative comments.

Most students are more interested in the grade they receive from the assignment than carefully reading tutor comments (Weaver, 2006; Higgins, Hartley & Skelton, 2001). However, that should not imply that feedback is not important. Just like Weaver (2006), Higgins et al. (2001) concur that tutors argue that students do not take feedback comments seriously, that they only care about the grade and that the only time they read the comments is when that feedback concerns correct exam answers. Comparatively, these researchers associate giving feedback to the communication process which involves “the linear transfer of information from the sender (tutor) to the recipient (student) via a media (usually written comments)” (Higgins et al. 2001, p. 271). Similar to Lea and Street (1998), Higgins et al. (2001, p. 272) further contend that “tutors assume a position of authority within a power relationship based on their experience and institutional context”, where the tutor occupies the dual role of both assisting and passing judgement on the student. In addition, Higgins et al. (2001) suggest that there should be more open discussion, collaboration and negotiation between tutors in order to reflect on, question, make explicit and share competing understandings. Like Lillis (2003), Higgins et al. (2001) further suggest that feedback needs to be more dialogical and ongoing, which means that discussion, clarification and negotiation between students and tutors can equip students with a better appreciation of what is expected of them in the process of writing. In contrast to Lillis’ (2006) talkback approach, they suggest a feeding forward approach instead of a feedback approach (Higgins et al. 2001). Similarly, Boughey (1997) reports that she uses questions as part of feedback to prompt students to reflect upon what they had written so that they develop their awareness of the need to be explicit in writing and to consider the possibility of the existence of viewpoints other than their own. Dowden et al. (2013) also report that “feedforward” enhanced the efficacy of written feedback. Both feedforward and talkback are very critical in providing feedback to students. These strategies could improve students’ conceptions of feedback and help them develop critical thinking skills and academic literacies, which they can apply in future writing tasks.

Blair and McGinty (2013, p. 466) define feedback dialogue as a collaborative discussion about feedback (between lecturer and student or student and student) “which enables shared understandings and subsequently provides opportunities for further development based on exchange”. Furthermore, these researchers reveal that students find feedback difficult to understand because they do not understand the expert language of the discipline. They concur with researchers above that students struggle to comprehend feedback because they do not have the pedagogic or assessment literacy needed. In addition, Blair and McGinty (2013) found that students wanted a one-to-one consultation with the tutor regarding feedback. One-to-one consultation applies in residential universities, where tutors can meet face-to-face with their students. It is considered by the researcher that consultation in this form is very difficult to apply in an ODL context. This is often the case, as lecturers who are the primary producers of feedback do not have the capability to physically meet with off-campus students.

Blair and McGinty (2013) also recommend the training of students to understand feedback and argue that students should be engaged in a dialogue for them to effectively utilise feedback. Moreover, these researchers recommend deeper dialogue for students to take ownership and responsibility for learning and feedback negotiation where a discussion on feedback takes place. The practice of giving feedback cannot be based on belief but should be informed by theory.
It seems like students are mostly unhappy about the feedback they receive from lecturers. Dowden et al. (2013) indicate that students are generally dissatisfied with feedback as the quality thereof is not proportional to the amount of money they pay for university education as well as the disjuncture between feedback and the learning outcomes. Furthermore, these authors also argue that many undergraduate students do not have the pedagogic or assessment literacy to dissect and understand feedback. In addition, they point out that emotion is underestimated when giving feedback. Poulos and Mahony (2008, cited in Dowden et al., 2013) report that students prefer feedback to be specific and timely, and this facilitates a smooth transition of first year students into university. Similar to Blair and McGinty (2013), Dowden et al. (2013) also found that students would like to have contact with the marker regarding additional clarification on the feedback provided. Moreover, Dowden et al. (2013) argue that feedback is mediated by emotion, and the degree of support in learning and teaching also influences students’ perceptions. Their findings indicate that many students were not assessment literate and that contributes in them not using the feedback provided more efficiently. Moreover, these scholars suggest that students should be taught how to respond to written feedback. They also highlight that most teaching staff members do not have teaching qualifications and that may also contribute in the absence of provision of quality feedback to students, as they were not trained to do so. A lack of academic staff qualified specifically in teaching is likely to prove true for ODL institutions in general. The implication of staff unqualified in actual teaching supports the assumption that teaching staff also lack training around assessment practices for learning. However, ODL institutions are attending to the development of teaching staff by providing in-service training on assessment. For example, the ODL institution in which this study was conducted offers professional assessment training to academics.

Pedagogic practices like assessment cannot be done on a theoretical vacuum, as theory should inform these teaching practices. Boud and Molloy (2013) argue that the practice of giving feedback in higher education is not influenced by research or theory. One of the suggested approaches to feedback, identified by Boud and Molloy (2013), is the “feedback sandwich” where negative feedback is sandwiched by two sides of positive feedback. For example, one tutor gave the following sandwich feedback:

“You have submitted a thoroughly researched piece of academic work. Your argument is sound and you have used recent literature to support your claims. However, your work lacks a coherent structure, as your ideas are not presented well. I suggest you always use a topic sentence together with your supporting sentences in your paragraphs to address this. Otherwise, your hard work and rigour is evident in your writing and keep it up.” (Feedback by tutor)

Boyd and Molloy (2013) argue that feedback should be the fundamental part of curriculum design and not just an episodic mechanism delivered by teachers to learners. These scholars also indicate that factors -such as modularisation and semesterisation of courses- have brought with them less assessment and feedback opportunities. They indicate that, historically, feedback used to be a one-way communication from the teacher to the students, where the latter did not have any active part to play. This can also be attributed to teacher-centred approach, which predominated the education landscape for decades. The fact that there is a paradigm shift from teacher-centred to learner-centred approach also implies that the way feedback is written and given to students should also change. They contend that, if there is no discernable effect, the feedback has not occurred and that feedforward is not a separate notion but a necessary characteristic of feedback (Boud & Molloy, 2013). Similarly, they also advocate the training of students to assimilate feedback so that they can be assessment literate. They also point out that, in providing effective feedback, teachers might be preoccupied with the notion that they should not spoon-feed students and this has also denied students to receive an enriching feedback from them (Boyd & Molloy, 2013). These
researchers also suggest that, if the active role of learners could be acknowledged, then feedback conception should move from being mechanistic to being responsive. Furthermore, they indicate that “underpreparedness is one of the factors contributing to incomprehensibility of feedback by students” (Boud & Molloy, 2013, p. 705). These scholars argue that students should play an active role for them to be able to use feedback effectively. They also advocate that feedback should be embedded within the curriculum. They argue that the learner-centred approach does not necessarily render the teacher redundant in feedback but repositions the teacher to new sets of responsibilities by assuming the facilitator role.

Price, Handley, Millar and O’Donovan (2010) argue that much staff time and effort go into the production of feedback, while little is being done to measure the impact of feedback. Price et al. (2010) also concur that assessment literacy is key to evaluation of feedback and feedback processes. Furthermore, these scholars report that the corrective mode of feedback was encouraged by Behaviourism. Similarly, they argue that assessment literacy is important for students to use feedback more effectively. They also report students’ dissatisfaction with feedback in terms of illegible handwriting, negative tone, ambiguous feedback, incomprehensible feedback, less time spend on feedback, inappropriate feedback, clarity and applicability of feedback, as some of the themes emerging from their study. In contrast, staff are reported as having the belief that their feedback is effective and providing guided feedback. Price et al. (2010) report that students need more than justification of the grade in feedback. They also argue that teachers do not want to change the way they provide feedback, despite students being dissatisfied with the feedback.

Saddler (2010) also concurs that students do not have the assessment literacy to understand and effectively use feedback. He contends that there is uncertainty regarding the impact of feedback.

Research reveals that students would like their teachers to attend to mechanical errors and that academic literacies indeed involve deeper writing issues than just surface grammar errors. As discussed above, feedback to student writing is an important pedagogical practice in higher education, particularly in ESL contexts. Nothing is more valuable to ESL students than being shown the strengths and weaknesses pertaining to their writing. Therefore, teaching through feedback is one of the precious opportunities AL practitioners may use to effectively acculturate these learners into their discourse communities.

**Research Method and Design**

The study was qualitative in nature and used the case study as design. The case study approach was used because a particular case -ESL students’ perceptions of feedback- was investigated to find out how they perceive the quality of feedback they receive on their written work. The sample comprised tutors who mark assignments and exams for the English for Academic Purposes module, and the students. A total of eight English tutor-markers participated in the study. All eight tutors who mark for this module were willing to participate in this study after an invitation was extended to them. All ethical issues were observed including anonymity (pseudonyms were used instead of real names), confidentiality and the right to stop participating in the study amongst others. A questionnaire, focus group interviews and marked student assignments were the data collection instruments used in this study. A questionnaire was administered to both students (appendix 1) and tutors (appendix 2) and was subsequently followed by interviews and content analysis of marked assignments. The rationale behind the use of a combination of these data collection methods (triangulation) was to get rich and in-depth data regarding students’ and tutors views on feedback (Bell, 2005).

This was also done to replicate the methods used by theorists of the academic literacies approach, which is the theoretical framework underpinning this study (Lea, 2008; Lea & Street, 1998).
Lea (2008) states, “the academic literacies approach generally uses qualitative and ethnographic methods to obtain data. Accordingly, interviews, students’ writing samples and feedback on students’ writing were identified as the common methodological approaches used in academic literacies research” (p. 232). However, in this study questionnaires were also used as a data collection instrument, and the study adopted a case study instead of ethnography.

Although interviews are considered to be a common data collection instrument in qualitative research, they were complemented by an open-ended questionnaire and marked students’ essays, which provided rich reliable data. The study used focus group interviews, which probed students’ perceptions and experiences about feedback to student writing to supplement and confirm the questionnaire data in order to increase the reliability of the data. The purpose of the interviews in this study was to gain insight into English first year university students’ and tutors’ perceptions and experiences regarding feedback to student writing, as well as to confirm questionnaire data (Kobayashi & Rinnert, 2002).

Documents in research may include, *inter alia*: policies, acts and written essays. In addition, the material may also be public records, textbooks, letters, films, tapes, diaries, themes and reports (Neuman, 2006). In this study, it was important to look at student essay assignments in order to confirm the data from both student and tutor questionnaires. Content analysis -which is defined as a technique for gathering, analysing and interpreting the content of text- was used to analyse marked assignments (Ary, Jacobs & Razavieh, 2002; Neuman, 2006). In addition, content or documents analysis focuses on analysing or interpreting recorded material to learn about human behaviour. Therefore, the documents in this study were students’ marked assignments. The analysis focused on students’ writing, and tutor feedback on students’ writing were explored in addition to administering questionnaires and conducting interviews in order to adhere to the academic literacies theory. This data collection strategy was also employed to validate both student and tutor responses to confirm or corroborate information from other instruments (the questionnaire and focus group interviews). Content analysis was also adopted in this study to answer the sub-question: How do tutors respond and give feedback to first year students’ academic writing?

Fifteen (15) scripts were randomly selected and analysed, but only nine were selected to report on as data reached a point of saturation (Fossey, Harvey, McDermott & Davidson, 2002). Data analysis in this study involved three steps suggested by Vithal and Jansen (2005) and (Neuman, 2006), namely: open coding, axial coding and selective coding. Basically, data analysis and interpretation followed the grounded theory framework. The researcher primarily used immersion strategies, that is, “reliance on the researcher’s intuitive and interpretive capacities” (Marshall & Rossman, 2006, p. 106). Therefore, the study looked for patterns in relationships and the researcher created new concepts by blending together empirical evidence and abstract concepts. The researcher categorised data into codes and thereafter identified patterns and relationships between the three sets of data from the questionnaires, focus group interviews and student’s essays.

In data analysis, the goal was to organise specific details into a coherent picture, model or set of interlocked concepts (Neuman, 2006). Responses from each question were grouped together. An analysis was undertaken and codes were assigned to the data and themes and categories began to emerge. However, only selected representative quotations were recorded and reported on this study.

**Findings and discussion**

This section presents the results of the study. The results are presented by first highlighting the question asked and the responses to that question, followed by an analysis and interpretation.
Students' responses on feedback

Some participants indicated that they value feedback and it helps them avoid repeating the mistakes in future writing tasks. For instance, Jim indicated that: “I feel good because I will know the way forward after that” and Mary noted that: “They help improve your mistakes.” Similarly, Sarah commented that: “During tutorials a tutor must ask students to write an essay and mark them in class to correct and show us our mistakes before we submit our essays to the lecturer”.

However, some students were not happy with their feedback due to the effort they put in the task, particularly when they did research and yet received a lower grade. Some put it like this: “I am so pleased but at some extent I feel that I deserved more than the mark I got” (Calvin). Debora indicated that: “Some of the feedback are not good when you give us”. Samantha said she is “not happy because they (tutors) are not satisfied even though I spend a lot of time researching and finding information on the topic”, while David said: “To be honest there was not much feedback because I got a high mark”. These findings corroborate with studies by Dowden et al. (2013) and Price et al. (2010).

Participants found that they did not receive good feedback from their tutors regarding their writing. One student lamented that: “They are not as clear as to what I was supposed to write or where I was wrong” (Mosima) while another one said that “this time around not useful because of illegible handwriting”. These comments indicate poor use of feedback and participants did not benefit anything from the comments; it resonates with Krause's (2001) findings. As a result, tutors missed a good opportunity of communicating with students and learning. This practice on giving feedback should be discouraged by all means.

However, some found that the feedback is “very useful because they pinpoint all the mistakes, so I get a clear understanding of what I should do next time on my essay assignments” (Lerato). Furthermore, another one said: “I like knowing what the lecturer/tutor thought about my essay and what they found exciting and not so exciting, the feedback is of great importance, I learn a lot from them” (Tlou).

Seemingly, some markers gave useful comments while others did not give any helpful comments. The fact that some students indicated that feedback was useful refutes assertions that students do not value feedback, as alluded by Higgins et al. (2001). Students yearn for teaching from ESL practitioners through quality feedback and if we are not doing that, we are failing them.

Feedback is very important, more especially in the ODL context, as it is one of the few interactions that tutors or markers have with students. Therefore, the quality of feedback that students receive from ESL practitioners cannot be underestimated. Interestingly, an analysis of marked assignments data also revealed that students who got high marks did not receive any feedback comments except “excellent”. Some students need to know how they got that mark and the good things they did, so that they will carry on doing that way in their future writing tasks (Weaver, 2006). Some respondents thought that the feedback they received was very useful. These students were keen to know where they went wrong in their essays. One student complained of illegible handwriting and could not benefit from the comments.

The students felt error correction is important when marking. Some felt that lecturers/markers should focus on spelling. However, some students felt that grammar should not be considered when marking; hence suggesting that only content is sufficient.

Unsurprisingly, some students expect marking to focus on error correction. For instance, Tom commented that tutors should focus “on understanding of how I wrote on that paper and focus on correcting my mistakes” while David said: “They assist you a lot you turn not to repeat what was
detected as wrong”. Similarly, Nancy said: “It helps to identify the mistake I made and do some corrections according to the markers comments”.

Two students indicated that markers should focus more on content than on language, and this is a very rare demand from ESL students. This comment resonates with a number of researchers advocating the move away from concentrating too much on grammar to content related feedback (Curry, 2006; Fregeau, 1999; Saito, 1994; Harris, 1977). One participant said that marking should focus on “the points/idea and not much of the framework (grammar/language)” (Jim) while another said marking should focus on “other things except spelling” (Karabo).

One student requested for empathy from the markers by stating that: “When marking our assignments, please do not look down on us. Place yourself in our position and try to think like we do. A student’s perception on a certain topic will not always be the same as those of the lecturer’s” (Thandi). This resonates with Dowden et al. (2013), who argue that the issue of emotion is often ignored while providing feedback.

Students clearly indicate that grammar -spelling in particular- is a great challenge to them (Lloyd, 2007). They would like to have all their mistakes highlighted so that they will be able to correct them (Radecki & Swales, 1988). Notably, this shows that they need comprehensive feedback that addresses all their weaknesses and strengths. Some also feel they also need to be commended when they do well. In other words, they need markers to also give positive comments instead of being negative all the time. Therefore, they need motivation in this regard. Boud and Molloy (2013) mentioned that “sandwich” approach when providing feedback.

These responses indicate that students would like to learn from their mistakes where their writing weaknesses are brought to the surface by markers, so that they would not repeat the same errors. This implies that tutor-markers need to teach through giving feedback, and this is crucial in ODL, where students get only one of the rare opportunities of having communication from the teaching team regarding their writing. On the whole, data from students indicate that these ESL students are not provided with good feedback to enhance their learning.

**Tutors’ responses on giving feedback**

While writing feedback, one tutor made the following comments:

“PLEASE NOTE THAT TASKS 2&3 WAS SUPPOSED TO BE SUBMITTED AS TWO SEPARATE TASKS. PLEASE ENSURE THAT YOU FOLLOW INSTRUCTIONS CAREFULLY IN FUTURE. WHILST YOU HAVE RAISED SOME VALID AND INTERESTING VIEWS YOU HAVE NOT MANAGED TO ORGANISE YOUR ARGUMENT IN A LOGICAL AND COHESIVE MANNER. YOU ALSO NEED TO PAY PARTICULAR ATTENTION TO YOUR WORD ORDER AND SENTENCE STRUCTURE. MAKE USE OF A DICTIONARY TO VERIFY YOUR SPELLING AND VOCABULARY” (Feedback by tutor)

In this assignment, the marker circled all language errors -for example, spelling and vocabulary. Language errors were mostly highlighted, as literature has confirmed that most feedback comments focus on grammar aspects. The student was advised to define different types of euthanasia. Though this marker is pointing out issues that the student needs to work on, the use of capital letters is not setting a good example to students, as they may adopt this style of writing in their future writing tasks. Accordingly, the marker is advising the student to use a dictionary to fix spelling errors and for improving vocabulary. This could attest to the fact that students delay writing assignments to the last minute to an extent that they submit poor quality work (Ellis, Taylor & Drury, 2005; Gambell, 1991).

When giving feedback, tutors indicated that they make feedback as comprehensive as possible in order to make the students aware of what they did right and where they need to improve. For example, one tutor said: “For those who perform badly, I comment on every item e.g. content,
organisation, language, show them what and where to improve” (Tutor 2) while another tutor stated: “I indicate where they have gone wrong and try to encourage them to correct their mistakes” (Tutor 4). Furthermore, another tutor provides “guidelines as far as possible:—by giving alternative answers, approaches or different responses, sometimes not possible” (Tutor 4). One tutor said: “Start with positive things like ‘I enjoyed reading your essay, your essay/language/organisation is good’. Then I indicate the areas which he/she needs to improve” (Tutor 7).

This finding indicates a motivational role, which tutors need to adopt when responding to students’ work before pointing out areas where students need to improve (Weaver, 2006). However, some responses from marked assignments indicate that, when students are doing well in an assignment, tutors tend not to give elaborate comments. In addition, what tutor-markers have said did in correspond with what they do in practice.

Generally, tutors had different views on commenting on content and grammar. One tutor said: “I give the student what he deserves, but indicate to him/her where he went wrong with the hope that she would rectify and also give an average mark for the content and less mark for grammar obviously when the grammar is irrelevant it mostly distorts the content” (Tutor 3). In contrast, another one said: “I believe that the content should weigh as much as language because this is academic writing. Language can sometimes hamper content, but the language is a means to content delivery” (Tutor 7). Furthermore, one tutor said: “I look at the facts, the right answer more than the grammar. Although grammar is also important, correct response counts more” (Tutor 4).

This finding indicates that it is difficult to evaluate content that is clouded by grammar mistakes. It can be deduced from these responses that both language and content are important aspects of writing and should therefore be treated equally. Disappointingly, one tutors’ comment was just a phrase which stated: “Mind your spelling”. Some language errors were circled whereas some were ignored. Good points were appreciated and talkback was used (Lillis, 2001). The comments were not explicit enough to show the student in detail what she does right or wrong in the essay and how the student can improve future submissions. The comment is not sufficient enough as it only comments on grammar (spelling) and nothing about the content. This confirms Harris’ (1977) and Fregreaus’s (1999) observations that teachers tend to focus more on grammar and less on content when marking essay assignments.

The responses above indicate that more attention should no longer be on surface grammar features but also on content. This suggests that focus should be on deeper writing issues. However, the finding is contrary to Harris’ (1977) observation where teachers focused more on grammar when marking. Therefore, the article stresses the importance of addressing both content and grammatical aspects.

Another tutor demonstrated poor quality of marking when he/she did not even give sufficient feedback. The comment reads “Good essay” (Script 3). There is no evidence that the marker read the essay. Obvious grammar errors were not highlighted. Again, comments were not sufficient and a student who could have probably failed this assignment has passed with flying colours. This is an example of poor marking and this student will probably not ever come to learn that academic writing is not story-telling and is likely to repeat the same writing style in other courses, as it was earlier rewarded. However, another marker tried to give more details in his/her comments. The comments state that “I enjoyed reading your work-has good points, language not bad but should have been edited before submission, be more relevant”. The marker comments motivate the student and also highlight areas that need some improvement. The marking is elaborate and does not only focus on grammar errors.

In another script, the tutor never bothered to give any comment. The marker used the marking code to show the student language errors and where points are not clear for more explanation. This
is poor marking and this finding corroborates with Lea and Street’s (1998), where tutors fail to identify the components of writing provided by students. This student could have just passed, but failed despite providing the work in a coherent manner and structure. Perhaps this confirms Harris’ (1977) observation that tutors tend to give a lower mark to a student whose work has grammar errors despite having good content. Fregeau (1999) argues that instructors’ obsession with grammar errors hurts our students.

Another tutor just gave a one-word comment (Excellent) on the essay. Though the student did well in the assignment, a comment like this is not sufficient to the student. The marker just ticked the paragraphs to indicate they are fine. No written comments. Again, well-written essays have fewer comments. As already indicated in interviews comments on feedback, students would like to know what they did right or wrong. Despite an excellent work by the student, the marking is of poor quality.

As confirmed by many studies, most common problems tutors commented on are grammar (spelling), coherence, organisation or structure and citing sources, which are also confirmed by responses from student questionnaire and marked assignments. As usual, tutors put more emphasis on grammar when marking whereas content is less commented on. Therefore, tutors need to address all aspects of academic writing when commenting on students’ work, as the marking code for English for Academic Purposes module specifies. The approach used by markers is largely the Study Skills oriented, where more emphasis is put on grammar. Though grammar is an important element of writing, tutors need to shift from the Study Skills approach to the AL model where all the components of writing are also looked at.

**Recommendations**

Feedback is an important teaching tool which should be used effectively in order to address issues with which students grapple. It is a beaming light in the path of learning and, if it is dim or dysfunctional, students will continue to walk in the darkness of illiteracy. The provision of marking services should provide value for money for students who paid precious tuition fees to obtain their education.

The study recommends a talkback approach as a better way of communicating with students regarding their writing. In contrast, other researchers suggest feeding forward instead of feedback. In other words, feedback should help students to produce better writing in future writing assignments. The article recommends both talkback and feeding forward as a fresh different nomenclature to feedback.

Feedback will be irrelevant and meaningless if it is written in a language students do not understand. The article recommends that feedback should be written in a clear unambiguous language.

More researchers suggest effective ways of giving feedback to students for the development of academic literacies, peer feedback such as giving dialogical and ongoing feedback (talkback). On the one hand, students struggle to understand tutor feedback whereas, on the other hand, tutors misinterpret and misread students’ work as the very things they were looking for are sometimes provided but failed to recognise those aspects of writing (structure and argument).

**Conclusion**

Overall, the findings of this study do not differ much with the results presented by other studies. However, the findings of this particular study are important as they help us to understand how ESL students and tutors in an ODL context view and provide feedback, respectively. Therefore, this study contributes to the body of knowledge in the field of feedback in ESL and ODL contexts. Factors such as incomprehensible feedback, ambiguous feedback, illegible writing, and student emotions...
are some of the challenges unveiled in this study. Other concepts like feedforward, feedback dialogues, talkback, student training on assimilating feedback and assessment literacy, as well as conceptualising feedback in curriculum design, are suggested as some of the strategies to provide feedback. To sum up, the findings indicate inconsistencies regarding the provision of feedback by tutors. The study also reported on the case of students who felt they deserved more and could not impress the marker despite all the hard work they put into their work. In the ODL context, feedback is not the only way students can be taught and learn, rather it is pivotal in learning and teaching strategy.

Note

1 Grammar errors were not edited

References


Dear Student

I am embarking on a research study entitled “Academic Writing in English Second Language contexts: Perceptions and Experiences of University first year students and tutors”. Please fill in this questionnaire as honestly as possible.

Demographic Information
Mark the appropriate box with (X)

1. What is the name of your degree?
   _______________________________________

2. How old are you?
   16–19  20–23  24–27  older than 28 years

3. What is your gender?
   Male    Female

4. What is your home language?
   N. Sotho  Venda  Xitsonga  Setswana  Zulu  Other (Specify_________)

5. What do you do apart from being a student? You may mention your occupation (if applicable).________________________

Students’ perceptions and experiences of academic writing

6. What kind of English writing tasks or activities did you do in high school?
   ______________________________________________________________________________
   ______________________________________________________________________________

7. Do you think your high school teachers prepared you adequately for writing essay assignments in English at university?  Yes/ No
   Give reasons for your answer
   ______________________________________________________________________________
   ______________________________________________________________________________

8. What do you think lecturers and tutors should do to help you improve your essay assignments?
   ______________________________________________________________________________
   ______________________________________________________________________________

Open Praxis, vol. 7 issue 1, January–March 2015, pp. 39–56
9. Do you think the English course for you have registered can help you to write well in other courses? Explain.

____________________________________________________________________________
____________________________________________________________________________

a. Do you enjoy reading? Yes/No
____________________________________________________________________________

b. How often do you read?
____________________________________________________________________________

c. What types of books do you read? Why?
____________________________________________________________________________

____________________________________________________________________________

d. Do you think reading improves your English writing skills? Why?
____________________________________________________________________________

____________________________________________________________________________

10. Give your definition of good quality writing in an English essay assignment
____________________________________________________________________________
____________________________________________________________________________

Students’ views on feedback to their writing
11. How do you feel about the feedback you receive in your essay assignments?
____________________________________________________________________________
____________________________________________________________________________

12. What do you think your lecturers/tutors should focus on when marking your essay assignments?
____________________________________________________________________________
____________________________________________________________________________

13. How useful do you find markers’ comments or feedback in improving your essay assignments?
____________________________________________________________________________
____________________________________________________________________________

15. In your essay assignments or examinations, in which areas do you think you lose most marks?
____________________________________________________________________________
____________________________________________________________________________

Open Praxis, vol. 7 issue 1, January–March 2015, pp. 39–56
Students’ perceptions of their academic writing skills and abilities

16. How good are you at writing essay assignments in English? Why?

<table>
<thead>
<tr>
<th>Very poor</th>
<th>Poor</th>
<th>Fair to average</th>
<th>Good</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

___________________________________________________________________________
___________________________________________________________________________

17. Which activities/writing skills do you think contribute the most in improving your essay writing?
_________________________________________

___________________________________________________________________________

18. a. How important do you think the following aspects of written essays are?
Mark the appropriate number in each case with (X)

<table>
<thead>
<tr>
<th>Not Important</th>
<th>Fairly important</th>
<th>Averagely important</th>
<th>Crucially important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spelling</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Punctuation</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Grammar</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Organisation of ideas</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

b. What strategies do you use when revising your essay assignments?
_________________________________________

___________________________________________________________________________

c. What type of support do you require to improve in the aspects you selected in 18 a.?
_________________________________________

___________________________________________________________________________

19. What steps do you follow when writing an essay assignment?
_________________________________________

___________________________________________________________________________

Adapted from Margaret Van Zyl (Orr) (1993); Leki & Carson (1997)

Thank you very much for your time and patience in completing the questionnaire
APPENDIX 2

Tutor/Markers Questionnaire

Demographic Details
Mark the appropriate box with (X)

1. What is your highest qualification (in English Studies)?
   Diploma   Degree   Honours   Masters   Doctorate

2. For how many years have you been teaching English?
   1–5 years   6–10 years   11–15 years   16 years and above

3. How long have you been marking assignments for English first year students at university?
   1–4 years   5–9 years   10–14 years   15 years & more

Tutor/markers' perceptions of students' English academic writing skills in English

4. What is your general opinion of first year students’ academic writing competencies?
   __________________________________________________________________________
   __________________________________________________________________________

5. Based on your experience what specific difficulties do students experience when writing essays?
   __________________________________________________________________________
   __________________________________________________________________________

   a. What types of writing problems do you see as the most common in students' writing?
      __________________________________________________________________________
      __________________________________________________________________________

   b. What type of writing problems do you perceive as the most serious?
      __________________________________________________________________________
      __________________________________________________________________________

   c. What kinds of strengths and/or weaknesses do you see in your students’ writing?
      __________________________________________________________________________
      __________________________________________________________________________

6. What is your definition of good quality academic writing?
   __________________________________________________________________________
   __________________________________________________________________________

Open Praxis, vol. 7 issue 1, January–March 2015, pp. 39–56
7. What do you think should be done to improve students’ English writing skills?
____________________________________________________________________________
____________________________________________________________________________
8. In your opinion, what could be missing from students’ writing that was not addressed by the schooling system?
____________________________________________________________________________
____________________________________________________________________________
9. What do you think constitutes effective teaching and learning of academic writing?
____________________________________________________________________________
____________________________________________________________________________

Tutor/markers’ approach in providing feedback to student writing

10. In marking an assignment, how extensively do you comment on student writing?
____________________________________________________________________________
____________________________________________________________________________
11. Which approach (es) do you follow when giving feedback to students?
____________________________________________________________________________
____________________________________________________________________________
12. In your position as a marker, how would you describe your relationship with the student whose work you are marking?
____________________________________________________________________________
____________________________________________________________________________
13. How do you evaluate an essay assignment that has good content and poor grammar?
____________________________________________________________________________
____________________________________________________________________________
14. How do you evaluate an essay assignment that has good grammar and poor content?
____________________________________________________________________________
____________________________________________________________________________

Adapted from van Zyl, Margaret (1993); Leki & Carson (1997)

Thank you for your time and patience in completing this questionnaire
Perspectives on influencing aspects for students’ acceptance of multimedia materials in training programs

Mayra Lucía González Córdova, Marcela Georgina Gómez Zermeño & Irma Antonia García Mejía
Tecnológico de Monterrey (México)
mlgonzalez@outlook.com, marcela.gomez@itesm.mx & irma.antonia@itesm.mx

Abstract
This study was carried out in order to improve the understanding and learning of participants enrolled in face-to-face training programs, and to enhance their learning and retention of content through multimedia materials. A qualitative study was conducted to inquire about the perception of the participants and instructors of an Administrative training program. Through observation, interviews and a survey, the data was collected to analyze and interpret; it provided the knowledge to identify five perceived influencing aspects on the acceptance of multimedia in training programs, relating to comprehension, perspective of educational technology, beliefs and requirements of multimedia materials and academic performance. Such diagnosis provides a way to improve the instructional design of training courses; also designing multimedia materials that meet the expectations of future users and create competitive advantage by implementing multimedia materials, these would make a big difference from other courses.

Keywords: multimedia materials; multimedia content; continuing education; educational technology; meaningful learning

Introduction
Within training programs, there is a need to design and develop educational innovations to improve the quality of learning of the participants. The existence of Information and Communication Technologies (ICT) in teaching outlines a new paradigm where educational innovation is considered necessary because of the information explosion and the use of training materials with technological support. It is also necessary to study the methodology of training programs in order to improve the understanding of the participants who are professionals, and who face technological barriers when taking up studies again. Interactivity is a benefit offered by ICT, as they improve both vertical and horizontal communication changing the role of the student from passive recipient of information to active constructor of meaning. The set of technologies that benefit education in these areas is called Educational Technology (ET), a discipline that is advancing and is and will be the life cycle of educational innovations.

The precursors of Educational Technology (ET) were the first to question the problems associated with perception, motivation, individual differences and evaluation (Cabero, 2007). Through several studies it was concluded that the application of various instructional strategies produce different results.

In recent times, several factors that strongly influence adults’ training have been identified. A person who attends college acquires skills and competencies; however, to remain active, grow professionally and be even more competitive, it is necessary to continue in the field of education, in what is called permanent or continuing education. In continuing, permanent, or executive training, some participants fail to get the best benefits and understanding of the content of the programs, for example, due to family duties or to a heavy work load that prevent them from achieving a meaningful learning.
Distance education or e-learning can become a solution to this situation, as it focuses on education for adults, in which individuals are responsible for their own learning and the time and space in which they want to perform the tasks. These training options are based on a formal and specific methodology that also promote skills and technological competencies, but what about the modality? Does “distance” also foster these skills and competencies? In most traditional face-to-face programs participants are passive, but they need to promote meaningful learning in students.

Therefore, education programs can adopt ET resources and multimedia learning materials for innovation. However, for this purpose to be fulfilled, it is necessary to understand the profile of the participants and instructors and to understand their perspective regarding ET, in order to design appropriate methodologies and materials that have an impact on their work productivity.

Faced with this problem, there is a need to identify the key aspects for successful acceptance of multimedia in a training program that aims to benefit the learning of the participants.

Based on the above, we formulated the research question: What aspects do students perceive as having an influence on their acceptance of multimedia in the teaching-learning process of a training program and how do they impact on the educational actors?

This study traced a path that made it possible to provide meaningful answers to the research question, in order to achieve the following objective: to understand the aspects, which students perceive that influence the acceptance of new multimedia materials in the field of continuing education, to improve meaningful learning of the participants.

This research also aims to promote the use of ICT in the field of continuing education in order to foster self-learning through multimedia material, as it is one of the skills that globalization requires today, while providing competitive advantages of the product in the market. It is necessary to understand the profile, opinions, attitudes and aptitudes of the participants in this field, because knowing the above, and clearly understanding people’s views regarding adult educational technology, also provides knowledge to design methodologies and materials of interest that have an impact on labor productivity.

Use of Educational Technology and multimedia materials

The nineties witnessed the great momentum of ET with the introduction of the Internet. One of its purposes was to promote solutions and profound changes that benefit all levels of education (Cabero, 2007); as well as to transmit knowledge through technological means acting as facilitators of learning (Marín, 1998; Salmerón, Rodríguez & Gutiérrez, 2010). Escamilla (2000) refers to ET as the use of instructional methods (procedures that help students achieve the learning objectives) and the media and information (anything that can transmit a message) to educate. Cabero (2007), notes that ET currently focuses on the teaching and transmission of culture through technological means in different educational contexts.

Recent contributions from Communication Sciences, Sociology and Psychology have influenced the conceptualization and understanding of ET; however, there are currently three theories which are identified as key: 1) the General Theory of Learning, in which behaviorism is better known as the Science of Behavior by Skinner, and Piaget’s cognitive theories; 2) the General Systems Theory, which depicts instructional design as a flexible technological process, and 3) the Theory of Communication that refers to the development of media in education for a communicative process (Cabero, 2007).

The purpose of ET is not to instruct in the use of media, but to teach contents; however, media are considered facilitators of learning that contribute to avoid failure and dropout, and also to improve interaction and generate progress in academic, social and cognitive development (Marín, 1998;
Salmerón et al., 2010). Among the contributions of ET are new tools for education, multimedia materials or educational software, applications containing audio, video, images and hypertext that convey a message (Rodríguez & Vidal, 2010).

Multimedia materials are defined as hardware or software, systems or applications containing audio, video, images and hypertext intending to inform, transmit or communicate a message (Rodríguez & Vidal, 2010). It is worth mentioning that the main feature that differentiates multimedia materials is interactivity, as this enables the relationship between the user and the environment, fostering new skills in students (Becerra & Victorino, 2010). The introduction of these materials in education has fostered a new culture, in which there have been changes and emergence of new educational roles: the role of the student has shifted from being passive to being active, since now they direct their own learning. As for the teacher, they do not only teach, but now they advise, reinforce, direct, coordinate and sometimes design materials that help increase the interaction between teacher-student and student-student (Marín, 1998).

For a multimedia material to fulfill its purpose, it should have great quality in all its aspects: technical, pedagogical and aesthetic; this way, the user can create a satisfying experience when interacting with it.

Schnotz (2011) confirms that the concept of multimedia not only relates to information technology, but the combination of three levels, which designers sometimes forget and should be considered for the design and implementation of multimedia: 1) the technical level: they are the devices and carriers of signs; 2) the semiotic level: refers to the form of representation (text, images and graphics) and are the types of signs; and 3) the sensory level: the sensory modality or reception of signs.

Implementing multimedia in education involves new cognitive and metacognitive skills, since the media have given a solution to the educational problem of students’ motivation to learn (Marín, 1998). Gómez-Zermeño (2012) mentions that new technologies offer innovative ways to explore and acquire knowledge, which contributes to strengthening the educational environment. It is important to point out that introducing the multimedia technology in teaching does not guarantee the success of learning, because it is only used as a means to facilitate learning and develop student abilities. This teaching should be student-centered and be compatible with theories of learning; when it is used without any pedagogic basis it would cause a one-way teaching, in which students only receive information (Becerril & Victorino, 2010).

In relation to the implementation of multimedia in educational contexts, it is not about neglecting traditional education, but to exploit the educational potentialities they offer to remove time, space and sociological barriers from classroom teaching (Marín, 1998). In addition, there is evidence that learning increases due to the use of more senses or cognitive skills by students as they improve individual and collective communication; also, its use generates progress in academic, social and cognitive development (Salmerón et al., 2010).

**Effects on learning supported by multimedia**

Teaching with multimedia technologies is focused on students, as it focuses on their interests, previous knowledge, cognitive development and learning styles. Therefore, the teacher is no longer the star of the teaching-learning process, but should inquire into the psychology of learning rather than the content of the subject itself (Becerra & Victorino 2010). It is also necessary to know the reason why a multimedia educational practice would be included in the classroom, since according to Becerril and Victorino (2010) teaching with multimedia technology is successful provided they are compatible with the learning theories that underpin teaching practice.
Within the new flexible learning process, the abilities of adaptability, interaction, autonomy and creativity develop, i.e., it is a redefinition of the traditional models that introduce tools to build learning, causing a restructuring of educational strategies in which the best methods, tools and techniques that guarantee success and learning are selected (Salinas, 2004).

Some studies have found that the use of multimedia tools in teaching-learning accomplished that students not only learn faster, but the knowledge they gain has greater durability when compared to students who receive traditional teaching (Solivellas & Angeli, 2006). Students implicitly understand the content as an effect of a multimedia learning, in addition to increased motivation. It is also considered that the use of media in education is to transmit culture; therefore, Lara (2004) assumes that technological absence within institutions produces cultural isolation.

There are studies showing that academic performance is better when the learning process is related to the learning styles and the way in which the pupil expands them (Martin, 2004).

**Online Continuing Education**

Continuing education is education for adults with professional activities, it provides skills development for permanent update, as well as attitudes, skills and abilities. It is also regarded as the key to development and improvement of people, generating growth, maturity and opportunities (García & Lavié, 2000).

Figueroa (2005) states that there are two factors influencing continuing education: 1) emotional intelligence, as it is considered a key concept for the new organizations of the 21st century and the solution to the deficiencies of these organizations, as it can be used as an instrument to produce emotional capital, which increases the competitiveness, and 2) a positive organizational climate, as space-time where psychosocial growth, which involves the daily practice of emotional competencies, is realized.

Therefore, the internal quality of individuals is the starting point for the formation of human capital, as it is the creation of a chain that affects all aspects of human life, the profound relationship between feelings, attitudes and the socio-cultural-historical and natural processes. Thus, organizations that survive and thrive in this century will be those that adapt and sustain human relationships, by networking and acting flexibly.

In relation to skills development, multiple literacies are necessary in online continuing education environments, as it helps to decode and understand knowledge systems and mediated symbolic forms, in addition to digital literacy. It is also important for the individual to acquire the appropriate competencies, such as e-competencies, which enable to respond to current requirements. These are knowledge, skills, abilities and attitudes of the area of information technology which apply knowledge and cognitive and practical problems are solved. Similarly, the acquisition of competencies allows professionals to be capable of multitasking, plus facilitating their employability (Area, 2008; Buzón, 2005; Leibowicz, 2000; Villanueva & Casas, 2010).

Meanwhile, Villanueva and Casas (2010) distinguish the requirements of the 21st century as a melting pot of opportunities but also as a multiplicity of challenges that must be answered, one of these is the demand for proactive and not reflective students, ready to tackle challenges in a global world, which is a competitive environment.

Therefore, it is necessary that workers nowadays develop self-learning, distance contact and the use of social networks, thus placing the work of education as the basis for the development of these competencies, also the need to increase capacity adaptation and functions to survive in the competitiveness of the digital era (Villanueva & Casas, 2010).
Moreover, online continuing education helps organizations be intelligent facing the demands of the XXI century and efficiently achieve their goals through continuing training and development system (Silíceo, 2010; Figueroa, 2005).

**Technology acceptance model (TAM) and user experience with technology**

With the development and increasing use of technology in most aspects of life, it became necessary to develop a model that would allow to understand and study user acceptance of technology. Davis’s (1985, cited in Chuttur, 2009) proposal of a Technology Acceptance Model (TAM), posits that user motivation can be explained by three factors: *Perceived Ease of Use, Perceived Usefulness, and Attitude Toward Using the system*; system design characteristics are also considered as being a direct influence on acceptance of technology (Chuttur, 2009).

Some researchers have found it necessary to add to the model, for example in relation to social factors, such as communication channels, individuals, organizational members, and social system in addition to the technology itself (Susilo, 2014). However, this model has become very widespread to explain and predict the use of a system (Chuttur, 2009), and it has been revised by Venkatesh & Davis (1996) to include the user’s behavioral intention and actual system use, as well as external variables. Later, Venkatesh & Davis (2000) proposed the TAM2 model, which provides more detailed explanations for the reasons participants found a given system useful, including both voluntary and mandatory environments.

Chuttur (2009), points out there are many studies on TAM with several confirmatory results, although skepticisms remain among some researchers regarding the application and theoretical accuracy of the model, and thus future research should focus on the development of new models deriving from the strengths of the TAM model.

**Method**

Based on the research question *What aspects do students perceive as having an influence on their acceptance of multimedia in the teaching-learning process of a training program and how do they impact on the educational actors?*, we chose a qualitative method in order to discover, build and interpret a reality from perceptions and meanings produced by the experiences of the participants when facing the introduction of new materials in teaching, in addition to understanding people and their contexts. A phenomenological designed was applied. This type of study is based on several premises established by Creswell, Alvarenga-Gayou and Mertens (cited by Hernández, Fernández & Baptista, 2010) which are: it aims to describe and understand the phenomenon from the point of view of each participant and from the perspective collectively built; the researcher contextualized experiences in terms of its temporality; the collection of documents and materials are directed to find topics about everyday and exceptional experiences, and gathering information from people who have experienced the phenomenon under study.

**Research Context**

The study took place within a reputable Mexican institution, in an executive training program aimed at providing knowledge and skills updating to improve personal and business results, intended for professionals who need to be better prepared. This program is taught in different locations in the metropolitan area of Mexico City, however, the research was conducted in the modules offered in the State of Mexico Campus.
The program lasts 164 hours, the sessions are held on Saturdays with a duration of 8 hours in four work packages. Nearly half the time of the program (72 hours) is spent on a computer; there is a computer per person in the classroom along with the software needed. The instructors are free to choose the support materials for the course. While some do incorporate multimedia materials such as videos, digital platforms, interactive presentations and applets, some do not do so.

**Participants**

The population consisted of the program participants. A small sample was chosen in order to obtain results with greater depth, as the study does not seek to generalize the results, but to investigate to understand precisely the phenomenon of study and to answer the research question (Hernández *et al.*, 2010). Therefore, the study sample consisted of two groups of 46 participants, 24 in one group and 22 in the other. As for the socioeconomic characteristics of participants in the program, they are identified as upper middle class, since they are mostly business executives or managers who have a culture of continuous training for the development of new attitudes, skills and knowledge.

Also, 4 program instructors participated in the study, including the program director. These instructors have masters’ or doctoral degrees in engineering areas. They also have extensive experience as teachers in universities and companies as professionals, instructors and other consultancy activities; some of them are business owners, and all of them are PMP certified (Project Management Professional). They formed the sample of experts and we investigated their perspectives and experiences within the program and about multimedia materials.

**Data Collection**

For data collection, observation, surveys and interviews were carried out, in order to provide knowledge to the research, as well as to verify the validity and reliability of both the instruments and the procedure.

First, we began to apply surveys to participants in the training program; although this instrument is commonly used for quantitative studies, it was possible to adapt the survey to obtain qualitative data. Sierra (1999) points out that the survey can be used as a non-participant observation, so it was used to analyze what was not possible to observe in the qualitative study. The survey had 25 multiple choice questions regarding the students’ opinion, feelings, motivation, attitudes and what they expect or disapprove of multimedia materials. In this survey, multimedia materials refer to digital platforms; videos, animations and audio; tutorials on CD or encyclopedias; video games; blogs; interactive presentations and interactive online activities. Although the data collected was self-reported by participants and thus limited in nature by the accuracy of the participants’ responses, when dealing with perceptions this can be expected, thus results help direct further research, and are not meant to be generalized.

Also, we held qualitative observations, which are focused on understanding the perspective of the participants, obtaining information of the studied phenomenon, and discovering new concepts and confirming what was already known. Thus, the behavior and activities that participants performed within the classroom, the role that technological artifacts played, and the environment and the interaction between instructor-participant and participant-participant, were observed in detail.

Finally, semi-structured interviews were conducted with four program instructors; which consisted in using a question guide, together with other questions raised at the time, in order to obtain additional information on the subject (Hernández *et al.*, 2010). The type of questions were: a) general questions, b) background, c) knowledge, d) opinion and e) simulation. The purpose of
applying this instrument to instructors was to study in-depth the views of experts in training programs, something that was not possible to observe.

Data analysis

In this research, we chose to collect data from different sources and using different methods—triangulation of research methods—in order to attain a deeper understanding of the phenomenon.

For data analysis the audios of the interviews were transcribed and observation notes were collected. Afterwards, the data was explored, in particular the general ideas, to organize the data by categories. A reflection took place during the initial immersion, in order to detect whether the first data answered the research problem and described the phenomenon of study, in addition to finding the first differences between data patterns and relationships.

During the immersion phase, the reflection consisted of analyzing and comparing the first data with the second, which gave meanings and new concepts; also, when related to each other, the initial annotations were supplemented, and the main categories, patterns, and primary hypothesis emerged. The data were analyzed through qualitative coding, which consisted of coding the units of analysis through the method of constant comparison and emerging categories and subcategories of the study. The procedure validation, consisted of the evaluation of the units that were selected for each category, i.e. we questioned whether the placement of the units was correct and in case it was not, it was changed or added to the category “other” and in the end this was awarded a definitive code and description. The description of categories was then carried out, establishing categories relationship and generating explanations. Finally, conclusions were drawn from the data analysis and triangulation of theory.

Results

We begin by presenting the profile information of the participants. Defining the profile of people pursuing common training programs helps to improve the quality of teaching methods in this educational context.

The age of the people who attended the training course ranged between 23 and 46 years old, and most are male. Regarding family status, people who have a relationship without children predominate. Their professional areas include: a) architecture, b) engineering, c) project management, c) telecommunications.

Participants were frequently engaged in entertainment, cultural and sporting activities; they are also students with high academic performance, and they establish competency goals. According to Blanco and Gonzalez (2008), the establishment of such goals is the construction of various personal criteria, flexible and long-term, as well as considering errors as natural and important to learn from.

Regarding the use of educational technology, we found that students consider that encouraging the use of technology in continuing education programs would help them to supplement the training and reinforce learning, because the program would handle educational innovations that other programs do not use. Most participants already use technological devices such as smartphones, tablets and laptops or desktops, so they consider these would be utilized to facilitate the study of the materials.

In relation to multimedia learning, we found that most participants had already had some experience with multimedia materials and that they were generally satisfactory. On the other hand, subjects who did not know this type of learning reflected indifference, fear and uncertainty.

The research results show that for multimedia learning materials to have a positive effect on student learning, it is essential that they are properly accepted by each of the participants in the
training program, because otherwise it would come to cause adverse effects to learning and the methodology of the training course. Therefore, the aspects they perceived that influence the acceptance of interactive resources can be used for the benefit of the students in these programs.

Results show these to be five aspects, which are: Comprehension of the course contents, Perspective on the use of educational technology, Beliefs of multimedia learning, Requirement of multimedia materials, and Academic performance. These categories were obtained by the analysis of data collected in interviews, observations and surveys, and represent the perceptions of the participants; since the nature of the study is qualitative, the description of categories refers to the general perception of the participants and no particular frequency data is presented. These categories are explained below, arranged in order of emergence from the analysis as they reflect the explanations of what has been experienced, observed, analyzed and evaluated in depth.

Comprehension of the course contents. Some participants felt that their understanding was not complete, was not what they expected or was not like they really wanted it to be. The reasons why they described the above was because: a) the dynamics in which the contents are displayed; b) generating many ideas; c) lack of review; d) homologous presentations; e) lack of reinforcement learning; f) lack of materials for reviewing the information or learning; and g) lack of practice.

The results show that students with low understanding of the course content are those who accept innovative ways to enhance their learning, as they consider other alternatives to better assimilate the information. Schnotz (2011) notes that students benefit more by intermediating their learning with interactive resources. However, it was identified that regardless the Comprehension of the participant, it is necessary to attract students’ attention to the contents set by the instructor, since the presentation of some issues turn out to be monotonous, tedious or boring for students. This leads to a decreased performance, understanding and student motivation.

From the perspective of trainers, the program is fully balanced between theory and practice, they feel satisfied with the methodology used and also, in their opinion, the participants obtain full comprehension of the contents.

In this category, it was found that although the instructor knows how to guide the learning of the participants and see the needs of the group, it is essential to capture the attention of most of the participants, otherwise comprehension and participants’ performance is low. One of the reasons for which the instructor cannot capture the students’ attention is the monotonous way of presenting the content.

Perspective on the use of educational technology. In the present study we found that for program participants and instructors it is important and necessary to promote the use of educational technology in program activities because: a) training would be supplemented; b) learning would be reinforced; c) learning would be easier and convenient (greater assimilation) and would be strengthened; d) time is reduced and the participant’s attention would be maximized; f) facilitate access to and use of digital content; g) improve classroom dynamics and concepts are expanded.

The program is not entirely without educational technology and the participants considered it edgy and interesting, plus some participants are satisfied with the materials that are provided through the portal, but these are just class presentations and some other materials seen in class. Students indicate what is needed; a) activities that foster retention of content and let you see the issues more practically, b) the use of other means for projecting content, c) encouraging case studies, d) updating materials, e) increased use of the portal and communication outside the classroom.

From another point of view, students stated that to use mostly technology in the program would be difficult, considering that it takes more time to adjust and use. It was also noted that most of the
participants have the necessary artifacts to use educational technology, because they intend to use these in the classroom to reinforce learning, however, they also tend to be distracting.

The feedback from participants regarding the use of technology in education is the formation of an attitude towards an innovation, i.e., rejection or acceptance towards educational technology, through the knowledge that students have regarding the subject. Therefore, it is essential to educate future users about the different uses of multimedia in the teaching-learning process, because in this way the participant will know that the purpose of educational technology is to use technological means as facilitators of learning (Castro, Colmenar, Losada & Peire, 2003).

Beliefs of multimedia learning. The beliefs that participants have regarding the multimedia learning are made of: a) previous experience; b) expected benefits; c) the outlook on multimedia technology. The previous experiences prove to be of great importance because participants build their own point of view regarding the multimedia materials and they predispose them to accept or reject them; however, it depends on the prior experience they have with the resources, since the first experience influences the availability the user will have in future; also, a bad experience promotes content deviation (Castro et al., 2003).

Constraints to include multimedia in the teaching-learning process were identified, as participants fear the lack of personal attention from the instructor to mediate their learning in terms of the use of multimedia materials, and teachers fear they could be easily replaced. However, they recognize that this change is unlikely as a support material cannot replace the experience.

The benefits that participants expect of multimedia learning are: obtaining flexible resources in terms of space and time, as they require materials that enable them to reinforce what was taught in class, in addition to acquiring a digital learning to help them improve knowledge through simulation or practice of the contents, because, it is through experience that learning is achieved.

The students’ outlook was that multimedia technology is considered as what is used today both in the workplace and in education, it is also an easier way to learn and do things. It also refers to how to promote useful materials to facilitate the study and allow for faster development.

Most participants described feeling motivated, open to and interested in the idea of including multimedia in the program they were studying, since the design of the course would be improved, and they were interested in trying new ways of learning with technologies that are available. However, others reported feeling worried because they like the attention from the teacher; others felt distress that perhaps they would need to buy something to carry out the multimedia learning.

Requirement of multimedia materials. It was identified that the multimedia materials are accepted, provided they are of high quality, in order to fulfill their function, i.e., that they are support resources for learning and that they do not replace the activity of the teacher, but guide the user in the way technology should be used; also materials should be available for consultation.

The materials of most interest to the students are digital platforms and interactive tutorials; videos, audios and animations also have a high interest rate. As for the materials that obtained an intermediate interest, these include interactive presentations, thus leaving the interactive activities on the internet, blogs and video games as the materials of little or no interest.

Participants were also asked about the type of multimedia activities that they would like to perform, the options were: a) activities in which they just have to watch and answer, b) activities in which they have to do and prepare, for example interactive presentations. Most students chose option b, so that an inclination towards learning by practice was identified.
Royer and Royer (2002) mention that it has been proven that students who use and make their own multimedia activities or projects, build a better understanding by including multimedia activities done by the same student.

**Academic performance.** Finally, we found that academic performance also influences wanting to accept and experience new ways of learning, since the lower the performance of participants, the greater their availability for new experiences. Low-performing participants believe that multimedia materials help them because they would offer a new opportunity to study, as they credited the lack of time and other labor issues for their low performance, as well as the difficulties with the English language and lack of experience in the area. Participants with medium-high performance mentioned that dealing with the time to study is very difficult, because even if they want to focus 100% on the course, it is impossible. However, they recognize that home study is required to obtain a good comprehension of the program’s contents. Moreover, participants with high performance said they have had work experience previous to their graduation, which facilitates the skill to combine work and school. These people are self-described as fast learners, punctual, committed, prepared on the subject because they continually read about the program’s topics, while they make immediate application of what they learn, and finally, they show a great interest in the area of learning.

**Conclusions**

In this research we identified the five main aspects that students perceive as influencing the acceptance of multimedia materials in executive training programs: Comprehension of the course contents, Perspective on the use of educational technology, Beliefs of multimedia learning, Requirement of multimedia materials, and Academic performance.

These results can be taken into account in the various training programs and the different teaching modalities applied, when this educational innovation is used, because they show the resources of most interest and usefulness, plus the attitudes which are also influential.

The study results provide foundations for implementing educational technology in training programs; we identified that the level of comprehension of the participants influences the acceptance of multimedia materials, primarily because the reasons regarding why a full comprehension is not reached were found, which happen to be the lack of dynamism of the content and the lack of resources to reinforce learning.

The perspective that participants have regarding the use of educational technology is a trigger for accepting multimedia resources, since this perspective is generated by what they know or have heard about them, so that the individual forms his/her own early opinion. Similarly, awareness of the importance of technology in all aspects of life facilitates the implementation of multimedia in the field of continuing education, as the participant adapts more quickly to new methodologies with educational technology.

Concerning the beliefs on multimedia learning, they also happen to be a determining aspect for educational multimedia materials, because they are built by the previous experience, their expectations of the material, and the outlook on multimedia technology. Through this study it was confirmed that the positive experiences with multimedia materials trigger taste to multimedia learning and reinforce the acceptance of educational technology.

We also identified that regarding the requirement of multimedia materials, the learning of the participants would benefit through the media, as long as these were used to reinforce learning, in addition to being quality resources with technological support. Therefore, digital platforms, tutorials, audios, videos or animations are what prove to be of interest. It is noteworthy that an inclination
toward the practical learning was detected, so to carry out multimedia activities is of great interest and value to the participants. Similarly, negative emotions toward implementing educational technology in this field was found, due to feelings of distress and distrust of multimedia learning, therefore it is necessary to clarify what the use of multimedia technology in the teaching-learning process implies.

About the academic performance, we mentioned earlier that the level of comprehension influences acceptance of new materials for learning, academic performance will also be related, because if the performance is not what you expected, participants support encouraging the use of support materials to facilitate dealing with the lack of time to study or reinforce a difficult subject of study. Moreover, participants who have a high performance are identified as dedicated and committed to the study, and they also like and accept the idea of materials that can be used to further enhance their learning; however, the best learning is obtained by the immediate application and experience.

This study provides information on the student’s perceived influencing aspects for the acceptance of multimedia in training programs. Both the population and the sample in the study were relatively homogenous, thus generalizability is limited. Although the study did not aim at testing the TAM Model, some of the emerging categories from the study seem to be related to the perceived usefulness of the technology, such as Comprehension of the course contents and Academic performance, while Requirement of multimedia materials relates more to its ease of use, and the categories Perspective on the use of educational technology and Beliefs of multimedia learning, could fit with the Attitude Toward Using, which can have an impact on the behavioral intention to use. Thus, a tentative outcome could aim at confirming the TAM Model, but further research is necessary in order to attain a better understanding of the student's perceptions in this context.

Further research on this topic should involve participants in different training programs, also from different types of courses: short courses, seminars, workshops, etc., taught by other institutions or companies, in order to obtain and analyze a variety of data that yield more comprehensive results. Another research could focus on in-depth studies on technological knowledge that participants have to be users of multimedia learning materials; also, investigations that relate to the skills of instructors to mediate with multimedia are suggested.

However, the information provided in this study can be helpful in similar contexts as a way to improve the instructional design of training courses; also to design multimedia materials that meet the expectations of future users and create competitive advantage by implementing multimedia materials, these would make a big difference from other courses.

This research aimed as well to promote the use of ICT in the field of continuing education in order to promote self learning through multimedia material, as it is one of the skills that globalization requires today, while providing competitive advantages of the product in the market.

References


Thomson learning.


Role of e-learning in capacity building: An Alumni View

Muhammad Zaheer, Sadia Jabeen & Mubasher Majeed Qadri

Virtual University of Pakistan (Pakistan)

mzaheer@vu.edu.pk, sadiajabeen@vu.edu.pk & mqadri@vu.edu.pk

Abstract

The concept of knowledge sharing has now expanded because of sophisticated communication tools. A common consensus has been generated for spreading knowledge beyond boundaries and making collective efforts for the development of individuals as well as nations. E-learning has proven its authenticity in this regard. In developing countries, access to and quality of education are being addressed by e-learning strategies; being served as a tool of capacity building, this study is an attempt to explore the role of e-learning in capacity building of students in Pakistan. An on-line survey was conducted from alumni of Virtual University of Pakistan. Descriptive statistics and Pearson’s correlation were used for data analysis. Findings of the study show that e-learning plays a key role in capacity building of students in developing countries like Pakistan. It can further be used to enhance professional skills in specific disciplines.

Keywords: E-learning; Capacity building; Alumni view; Pakistan

Introduction

Provision of e-learning opportunities in the education sector has become a well-established fact; e-learning prospects are now open in 50 developing countries with more than 1000 institutions (Sharma & Kitchens, 2004). In recent years, it has been witnessed that online education is not being offered by distance learning universities only, conventional universities are also offering online courses because it helps reduce cost, improve market access and overcome capacity barriers. Prior research studies (Bajinath, Awad, Lowlana & Olakulehin, 2008; Olakulehin, 2008) indicate that the challenge of access, quality and capacity building in education can only be met by making e-learning a key strategy in developing countries.

With increasing popularity of e-learning mode around the globe, expectations are raised in terms of active learning. Further access to resources and flexibility of learning for learners along with refined and updated teaching methods is anticipated. In this regard, more focus is placed on new interaction methodologies for teachers and students in order to improve social and professional skills (Mason, 2006; Aczel, Peake & Hardy 2008).

Role of e-learning in capacity building in developing countries

Capacity building is defined as “The process of developing competencies and capabilities in individuals, groups, organizations, sectors or countries which lead to sustained and self-generating performance improvement” (AusAID, 2004). E-learning provides opportunities to citizens, particularly in developing countries, to acquire different skills like communication, interpersonal, management and leadership skills that facilitate the capacity building of individuals as well as of organizations (Bolger, 2000). The World Summit on the Information technology gave official endorsement to capacity building in e-learning. In this context, special emphasis was made on properly resourced ICT use in the education sector (ITU, 2006).

A study conducted by Ehlers, Aimerd, Gwardak and Dembski (2007) narrated the fact that e-learning plays an important role in polishing the innate potential for growth of the individuals in...
developing worlds. They focused on 40 development corporations working internationally. Results of the study endorsed the fact that e-learning is a useful tool for capacitating the unprivileged people in developing countries.

Distance learning with the use of ICT has also increased the possibility of catering the issue of capacity building of marginalized groups in developing countries. In underdeveloped countries of the world, specifically in Asia, use of distance learning as a capacity building tool to work with pro-poor development strategies is very important as it will ensure the active involvement of the poor in mainstream economy (UNESCO, 2004). In developing countries of Africa, the same shift in distance learning purposefulness is highlighted. Project Identification Report (2013, cited in SADC, 2014) did a sector analysis of the tertiary education and e-learning and identified the gaps. As a result, they suggested to improve capacity building in terms of research and emphasized on enhancing decision-making skills of students (SADC, 2014).

In developing countries, multiple factors restrain the access to education and capacity building of the individuals: language, finance and availability of limited seats in conventional institutions, are to name a few. E-learning by focusing on multiple methods can help to overcome these limitations in developing countries, as Berge and Leary (2006) stated “The challenge is to fully exploit electronic media, maximizing its usefulness and the realm of possible resources; e-learning must not be Power Point presentations modified into online modules, but rather well-designed trainings that draw on the best electronic resources available” (p. 57). Zander, Schloeder, Jacobs and Murphrey (2006) shared their experience of introducing e-learning to agriculturists working in dairy and livestock production. Findings of their innovation and adaptation of e-learning for capacity building suggest that this mode enhances the analytical skills and management skills of the participants as well.

E-learning Initiatives: success stories

There are a number of initiatives that can be interpreted as exemplifying the notion of e-learning in capacity building specifically in terms of leadership role. One of the prominent programs was launched by The University of Waikato in the year 1997 by the name of Mixed Media Programme (MMP). This program was initiated to meet the pre-service needs of the students who were unable to join on campus studies due to personal or professional commitments (University of Waikato, 1997). MMP served the motive of capacity building at various levels, not only professional development of teachers to train them how to teach on-line education, but also guided them towards mentoring, problem solving and interactive communication skills practices towards students (Campbell, 1997). MMP served as a continuous practice in e-learning settings through non-stop analysis, collaboration and reflections for enhancing leadership skills. Thus, it served the objective of “purposeful learning” in the community (Lambert, 2003).

Another presentable case study in this regard is the project “Flexible Learning Leaders in New Zealand.” This project focused on capacity building in the tertiary education through online learning. The project focused on developing professional, leadership and management skills to groom the potential professionals in a way that distinguished them from other graduates at tertiary level education. In addition to preparing groups of professionals with outstanding skills, this project progressed by focusing on establishing a national level mentoring network through online education (Shukla, 2005).

Two more initiatives i.e. The Interim Tertiary e-Learning Framework and E-learning Fellowships also emphasized the area of tertiary education and capacity building of the professionals. All these programs were successful and worked in four main areas i.e. leadership and capacity building, innovation and research inquiry, network building, professional development and reflective practices.
but the focus was more on professional development of the teachers rather than learners. Overall a mentoring approach was encouraged for learners but the inculcation of leadership, communication and management skills in context with students was not well dealt with (Ministry of Education, 2004).

**Existing Gaps in terms of Capacity Building in e-learning**

Any society’s welfare and wealth is determined by the capacity building of individuals and to educate in such a way that they may serve as productive members in all spheres of life (Hernes, 2003). Thus, e-learning by focusing on the capacity building can lead toward inclusivity, effectiveness and trustworthiness and this capacity building can be done by identifying the gaps in existing e-learning structures. As pedagogical trends are moving from active learning to analyzing and collaborative learning, so, it requires a mix of different pedagogical components i.e. simulation, communication, leadership, mentoring, etc. (Mason, 2006).

Aczel, Peake and Hardy (2008) identified four types of gaps in terms of capacity building by analyzing the six e-learning based organizations. The identified gaps were tutorial gap, community gap, production gap and instructional design gap. Further, researchers hypothesized and re-examined the data in order to find out the strategies organizations used to sort out the capacity building issues. Eade (2007) in his study concluded that there is no single determinant of measuring capacity building, it varies from situation to situation. Capacity building is not a quick fix, it has flexibility in terms of time and willingness of both sides i.e. the person who wants to capacitate and the one who wants to learn. In developing countries, most of the non-governmental organizations are serving as change agents and initiate this process, but this change is subjected to the institutional or organizational capability to inculcate such skills. Further, he stated that capacitating the young ones can be an effective tool to abridge the existing gap in terms of access and social justice.

Similar findings were shared by Kamruzzaman and Takeya (2008) in terms of capacity building in distant markets. Researchers infer from their findings that the capacity building process can be effective when access will be increased and the producers will be willing to use ICT as an important tool to enhance skills of individuals. The communication component in e-learning environments provides a set of opportunities for the learner to interact with tutors, other students and management as well. Practicing frequent interactions with tutors through e-mail and audio-video conferencing enables learners to communicate as per situation and circumstances (Humphreys, 2002).

**Multiple Skills Development and Capacity Building of Learners**

Mehra, Smith, Dixon and Robertson (2006) in their study focused on leadership styles in e-learning environments. They explained that collaborative leadership skills can be effectively enhanced through shared networks of students, when conducting projects in e-learning environments. Such leadership styles may be based on democratic norms which may determine high level of social and project management skills in students. They further proposed a collaborative –leadership model for e-learning environments. But in an online learning environment it is not necessary that leadership skills be developed all the time, as sometimes teachers or students are unable to build healthy relations in terms of learning. Further, drop-outs also restrict this process. In this regard, Forbes (2004) argued that e-learning has a solution to this problem in itself, as capacity building is a reciprocal process which could be done with frequent interactions of instructors and learners and through proper mentoring from instructors’ side.

Interpersonal skills along with management, leadership and communication skills are also considered important in e-learning organizations (Dobbs, 2000; Sofres, 2001). In learning
environments, inculcation of interpersonal skills among students is critical as it guides students in improving their listening, negotiation, questioning skills and motivates them to be good learners and un-biased in their approach towards life. In the project “E-learning for Leadership, Emerging Indicators of Effective Practice” conducted at University of Bristol, interpersonal skills were also recognized as a prominent factor of effective skill enhancement in students (McKimm, Jollie & Hatter, 2007; Sloman, 2001).

Critical Success Factor and Capacity Building of E-learners

Learning through open mode provides a great set of opportunities for students to develop their capability and capacity. The instructor, being the facilitator of this learning mode, plays a critical role for the success of such system. Skill development and knowledge sharing are key features of this system. Technology and support facilitate this process of capacitating the individuals (Burgess & Carpenter, 2008). Zaheer (2013) found that students in distance learning develop their networks called “Knowledge networks” to share knowledge and build capacity informally.

In order to run a successful e-learning program along with capacitating students with different skills, only provision of opportunities is not enough. Successful learning depends on different critical success factors such as technology, instructional design, infrastructure, interaction mechanisms, knowledge management and content as well (Sun, Tsai, Finger, Chen & Yeh, 2008; Mosakhani & Jamporazmey, 2010). Papp (2000) worked on the success factors in distance learning environments and concluded that measuring a single factor independently cannot bring some fruitful results in such way; a combination of factors and their inter-relationship can determine the success of any study program. A few researchers, after analysis of Papp’s study, suggested that e-learning success should be assessed through evaluating the students’ performance and learning itself (Benigno & Trentin, 2000). A consensus has been built by numerous studies and the majority of the studies identified instructor, knowledge, technology and university support as most prominent success factors (Selim, 2007; Shin, 2003; Sun et al., 2008; Mosakhani & Jamporazmey, 2010; Volery & Lord, 2000; Zaheer, 2013).

Study Context

In a developing country like Pakistan, e-learning has successfully played a significant role in winning the trust and satisfaction of many people across the country. This satisfaction has not only proven the success of the e-learning mode to enhance higher education but at the same time it has given rise to many challenges and the most important among them is the capacity building of online and distance learners in virtual environment (Jabeen, Din & Sadiq, 2012). Multiple assessment practices such as research projects and scenario assessment exercises have been used successfully in different degree programs at Virtual University of Pakistan for the capacity building of students but overall role of e-learning in capacity building still requires exploration (Din & Jabeen 2013). In this regard, the present study is an attempt to find out the perceived role of Virtual University of Pakistan in capacity building of individuals, being the first e-learning university of the country.

Objective and Purpose

The aim of the current research was to explore the contribution of e-learning in capacity building of students in developing countries with a specific focus on Pakistan. The objective was to investigate the opinion of alumni regarding the role of online learning in their capacity building. Further, this
research also intended to assess the critical success factors in the professional or other types of capacity building of the students.

**Method and Procedure**

An online survey link was sent via email to the 215 graduates of Virtual University of Pakistan who graduated in semesters Spring 2011 and Fall 2011. A total of 117 students participated in the survey and a good response rate of 54.41% was achieved. High response rate may be attributed to the students’ attitude towards online education as VUP students are good at using computers.

VUP offers only online courses so all these students had studied all of their subjects online which is a very important aspect of this study. Course material at VUP consists of video lectures, hard and soft copies of lecture handouts, online learning resources, OpenCourseWare (OCW) and Learning Management System (LMS). Instructional support is offered through Moderated Discussion Board, where students can post their lecture related questions; e-mail is a medium through which students put different queries. Assessment and evaluation is also done online, students are given assignments and online quizzes to test their knowledge. Mid and final examinations are also conducted online in a proctored environment. Two questionnaires were used as survey instruments in this study: critical success factors (CSF) were measured through the instrument developed by Selim (2007) and capacity building indicators were measured through a questionnaire prescribed by the Quality Assurance Agency of Higher Education Commission (HEC) of Pakistan. Both of these instruments used Likert-type scale with 5 categories.

The Critical Success Factors (CSF) instrument developed by Selim (2007) had 4 variables i.e. Instructor characteristics (INS), Student characteristics (STD), Technology (TEC) and Support (SUP) with 63 statements capturing all dimensions. The student satisfaction questionnaire also had 4 main variables i.e. knowledge, communication skills, interpersonal skills and management and leadership skills, and a number of elements to capture these variables.

**Table 1. Cronbach Alpha of Capacity Building indicators and Critical Success factors**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Number of Items</th>
<th>Cronbach Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Capacity Building Indicators</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge</td>
<td>5</td>
<td>0.818</td>
</tr>
<tr>
<td>Communication Skills</td>
<td>3</td>
<td>0.806</td>
</tr>
<tr>
<td>Interpersonal Skills</td>
<td>4</td>
<td>0.795</td>
</tr>
<tr>
<td>Management &amp; Leadership Skills</td>
<td>3</td>
<td>0.809</td>
</tr>
<tr>
<td><strong>Critical Success Factors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instructor</td>
<td>13</td>
<td>0.927</td>
</tr>
<tr>
<td>E-Learning</td>
<td>22</td>
<td>0.830</td>
</tr>
<tr>
<td>Technology</td>
<td>9</td>
<td>0.792</td>
</tr>
<tr>
<td>Support</td>
<td>9</td>
<td>0.831</td>
</tr>
</tbody>
</table>

Data in table 1 shows the reliability analysis of both instruments. Cronbach's alpha for all the variables is quite satisfactory showing high reliability of the measures used.
Results

Table 2 shows that the majority of the respondents are male (79.3%). Most (93) of the respondents are from computer science or IT (79.48%). A very important aspect is re-enrollment intentions. About half of the respondents were students and the rest were professionals, only 3% were involved in their own business. Alumni were asked whether they would like to enroll in any course in the future, 72% of the students said yes.

Table 2. Alumni Composition

<table>
<thead>
<tr>
<th>Variables</th>
<th>Dimensions</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>94</td>
<td></td>
<td>79.3</td>
</tr>
<tr>
<td>Female</td>
<td>23</td>
<td></td>
<td>19.7</td>
</tr>
<tr>
<td>Program</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BSBA</td>
<td>12</td>
<td></td>
<td>10.3</td>
</tr>
<tr>
<td>BSCS</td>
<td>21</td>
<td></td>
<td>17.9</td>
</tr>
<tr>
<td>BSIT</td>
<td>08</td>
<td></td>
<td>6.80</td>
</tr>
<tr>
<td>BS -Psychology</td>
<td>03</td>
<td></td>
<td>2.60</td>
</tr>
<tr>
<td>MBA</td>
<td>09</td>
<td></td>
<td>7.70</td>
</tr>
<tr>
<td>MCS</td>
<td>64</td>
<td></td>
<td>54.7</td>
</tr>
<tr>
<td>Current Status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td>56</td>
<td></td>
<td>47.9</td>
</tr>
<tr>
<td>Employee</td>
<td>58</td>
<td></td>
<td>49.6</td>
</tr>
<tr>
<td>Businessman</td>
<td>03</td>
<td></td>
<td>2.60</td>
</tr>
<tr>
<td>Re-enrollment Intention</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>85</td>
<td></td>
<td>72.6</td>
</tr>
<tr>
<td>No</td>
<td>32</td>
<td></td>
<td>27.4</td>
</tr>
</tbody>
</table>

N=117

Table 3 shows descriptive statistics. Alumni perceptions regarding all the variables of Capacity Building are high. A mean score of ($M=3.91$) about perceived knowledge gained after the completion of degree program with ($SD=.65$) shows high satisfaction of students about the knowledge they gained. Communication skills with mean score ($M=3.82$) also indicated high approval with reference to capacity building at individual level. Interpersonal skills with mean score ($M=4.01$) and Management & Leadership Skills with mean score ($M=4.03$) is significantly high. It shows that students even with online learning can develop good communication and interpersonal skills which are considered as the shortcomings of distance (online) learning.

Pearson correlation was carried out on different indicators of capacity building and critical success factors of e-learning. Table 4 indicates that there is a significant correlation between different indicators of capacity building and critical success factors. Instructors’ characteristics and
perceived communication skills of the students are significantly correlated. Technology used is also significantly correlated with interpersonal skills and technology used by the university also has significant correlation with perceived communication skills of students. Leadership skills are also strongly correlated with instructor, which explains that the instructor has a significant role in developing leadership skills among students.

Table 4. Correlation Matrix among Critical Success Factors and Capacity Building Indicators (N=117)

<table>
<thead>
<tr>
<th>Indicators</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Instructor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Technology              0.565</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Support                 0.620  0.826</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. E-Learning              0.693  0.635  0.672</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Knowledge               0.479  0.381  0.440  0.512</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Communication Skills    0.305*  0.292*  0.326  0.427  0.544</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Interpersonal Skills    0.353  0.260**  0.286**  0.387  0.706  0.599</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Leadership Skills       0.224**  0.330  0.366  0.391  0.557  0.526  0.598</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

p<.000
* p<.001
**p<.005

Discussion

A wide range of variation is found around the globe regarding e-learning and its dynamic role in changing educational scenarios. E-learning has been associated with many dimensions and
approaches linked with students learning, grooming and mentoring in various spheres of life. Such versatile approaches don’t explain a single dimension but rely on various experiments based on indigenous experiences. These variations are found from instructors’ approach of mentoring to management level training and from students’ learning to their professional capacity building. In all domains, roles and challenges are discussed by many researchers. Present study also documents a new dimension of e-learning i.e. capacity building of the students that is considered as a challenge too.

In developing countries like Pakistan, e-learning is not just restricted to access to the un-privileged but it was also anticipated that it will serve the purpose of providing skillful and purposeful education either through content or through mentoring and developing different social skills among learners (Heeks, 2002; Rajesh, 2003). This study in this regard took an alumni’s view to find out the role of e-learning in developing competence of students and also explored the success factors in this framework. As alumni were employed in different organizations after graduating from Virtual University of Pakistan so, they were expected to better identify and explain the role of e-learning institutes. Results of the study ascertained the fact that alumni considered the e-learning mode effective in developing communication, leadership, interpersonal and management skills. Their opinion could be validated from the results as well, as the majority of respondents showed their intention to take admission again in the same institution. It also supported the assumption that students were satisfied from e-learning mode of instruction.

Previous studies conducted by Campbell (1997) and Lambert (2003) also concluded that e-learning is successfully contributing to capacity building of students through mentoring and practicing interactive communication skills with them. In this way, it serves those people who were otherwise unable to develop their professional capacities due to official commitments. Technology is identified as an important indicator that facilitates the process of communication in e-learning mode either in the form of student to student interaction or student to instructor interaction. Provision of different communication tools to e-learners i.e. LMS, Skype, e-mail, tutorials, web-conferencing, chat rooms and discussion boards all offer a hand-on opportunity and training to improve communication skills (Kamruzzaman & Hiroyuki, 2008).

Another important dimension with reference to capacity building in e-learning is the development of leadership skills in students. It is a common perception that e-learning lacks the element of students’ grooming as they are not in direct contact with their respective teachers. Results of this research negate this assumption, as leadership is identified by the alumni as a prominent factor of personality development and grooming of students. Results of this study in this regard are consistent with the study conducted by Mehra et al. (2006), who also explored leadership skills of the students. Further, at next level they suggested collaborative style of leadership through continuous and direct interaction of students and teachers and students with students. Moreover, they focused on developing the democratic values among future leaders/students.

This study also explored critical success factors (CSF) that facilitate the process of capacity building. In this regard, results of this study discovered instructor as an important success factor that assists the students in developing leadership skills. There is a strong correlation between the two factors. Forbes (2004) in his study shared similar findings and he established the relationship between instructor and student interaction and mentoring behavior in order to develop leadership skills among students. Ehlers et al. (2007) explained a similar phenomenon in the context of the developing world and explicated the role of e-learning in capacity development of individuals in developing countries.

Development of leadership, management, communication and interpersonal skills is not restricted to the role of instructor and technology; student support services offered by universities also
contribute to capacity building. Selim (2007) identified student support services as important CSF in e-learning and results of this study also support the same phenomenon and student support provided by university was recognized as an important success factor by alumni. Further, results of this study are consistent with the studies conducted by Shin (2003) and Sun et al. (2008). They assessed support services as an indicator of student performance in e-learning mode and established the fact in their studies that frequent interaction, facilitation by university in administrative matters and technological support enhances the confidence and trustworthiness of students as well (Mason, 2006).

Most of the previous researches throw light on the role of e-learning in capacity building in terms of enhancing communication and leadership skills (Ministry of Education, 2004; Humphreys, 2002; Mehra et al., 2006; Forbes, 2004). This research also took into account management and interpersonal skills as important indicators of capacity building as the majority of students graduated from VUP are working professionals who belong to the business sector or computer industry, therefore it is necessary to groom them for these aspects as well. Results of the study indicated that alumni have also considered management and interpersonal skills as very important for their careers. Only a few researchers explored management skills (Bolger, 2000; Zander et al., 2006) and interpersonal skills development (Dobbs, 2000; Sofres, 2001) in e-learning mode and their findings are consistent with this research.

Conclusion

Data analyses of 117 alumni of Virtual university of Pakistan in which all the courses are taught online strongly support online education to enhance and initiate capacity building among students. Alumni have expressed a high level of satisfaction from the education they received and they rate their knowledge, leadership skills, university support, e-learning and technology as very high after the successful completion of their degree programs. And this fact can be ascertained from the results that 72% of the alumni showed re-enrollment intention at the same university.

Access to quality education, specifically higher education, is difficult to achieve in developing countries like Pakistan. Alternative strategies such as e-learning prove to be useful in these cases. Though e-learning has provided a platform to obtain quality education, still a vast majority feels that it has certain limitations, such as lack of capacity building. This research has proven the fact that e-learning is a successful tool for students’ capacity building in contrast with the perception of some people. Results show that alumni reported e-learning as an effective mode of learning to improve their communication, leadership and management skills which enhance overall capacity at individual and organizational level. Further, study results lead towards the conclusion that technology is also an instrument that helps improve interpersonal and communication skills, which provides the chance for social networking and enhances students’ capability of communicating with others.

E-learning as an alternative strategy of learning has overcome the shortcoming of the conventional mode of learning with respect to higher education. It has stretched the scope of education for everyone. Overall, it can be concluded from the results that enhancement of different skills among students and professionals can be incorporated through this learning mode.

Note

1 The questionnaire used for this research to measure capacity building is a standardized questionnaire that is prepared and validated by the Quality Assurance Agency of Higher Education Commission of Pakistan and is used for quality assurance in all public and private sector universities of Pakistan.
References


Rajesh, M. (2003). A Study of the problems associated with ICT adaptability in Developing Countries in the context of Distance Education. *The Turkish Online Journal of Distance Education, 4*(2).


Papers are licensed under a Creative Commons Attribution 4.0 International License

*Open Praxis*, vol. 7 issue 1, January–March 2015, pp. 71–81
Key skills for co-learning and co-inquiry in two open platforms: a massive portal (EDUCARED) and a personal environment (weSPOT)

Alexandra Okada  
The Open University (United Kingdom)  
ale.okada@open.ac.uk

Antonio Roberto Coelho Serra  
Universidade Estadual do Maranhao (Brazil)  
roberto@uema.br

Silvar Ferreira Ribeiro & Sônia Maria da Conceição Pinto  
Universidade do Estado da Bahia (Brazil)  
sfribeiro@uneb.br & spinto@uneb.br

Abstract

This paper presents a qualitative investigation on key skills for co-learning and co-inquiry in the digital age. The method applied was cyber-ethnography with asynchronous observation (forum and wiki) and synchronous discussions (webconference) for analysing skills developed by a co-learning community. This study focuses on participants from different countries who interacted during nine months in two open platforms: the massive educational portal EDUCARED of the “7th International Conference on Education 2012-2013” and weSPOT, an European “Working Environment with Social Personal and Open Technologies for inquiry based learning”. As a result of this study, it was observed that the EDUCARED portal led to the development of more explicit digital literacies, possibly because it was a simpler and familiar interface (forum). And in the weSPOT environment, experienced participants with digital technologies had more opportunities to develop other skills related to Critical-Creative Thinking and Scientific Reasoning.

Keywords: Skills; co-learning; co-inquiry; social networking; ELGG platform; NING platform

Introduction

The digital age is marked by the accelerated development of knowledge technologies, intelligent networks, massive and personalised platforms where individuals and communities instantaneously access, create and share information. In this context, it becomes relevant to investigate “Open Education in the 21st century”. Nowadays, the rapid advances of the Web and innovative pedagogies, participants requires participants to be able to collaborate together in order to co-learn and develop skills for co-creating knowledge anywhere and anytime.

In the decade of OER, MOOC and Massive Open Events, opportunities for open collaborative learning and investigation and the development of different competences have been increasing considerably. New platforms with innovative resources are emerging, such as the EDUCARED portal (http://encuentro.educared.org) and the weSPOT environment (http://weSPOT-project.eu).

This paper describes a qualitative study which focuses on the relevant skills that were identified by participants (learners and educators) for collaborative open learning (co-learning) and cooperative research (co-inquiry) in the weSPOT inquiry personalised environment and the EDUCARED massive educational portal.
The EDUCARED portal was developed for the 7th International Conference on Education organized by Fundación Telefónica from April 2012 to November 2013. The aim of this conference was to discuss “what 21st century education should be like”. This portal was based on the online platform NING (http://www.ning.com/), which allows participants to create their social networks with communication in various languages. Its interface comprises tools such as Alerts; Forums, Chat, Webinars; Photos, Video, Twitter, Integration with Twitter, Facebook and YouTube.

This massive open online conference comprised 18 months of discussions in online environments and face-to-face meetings every two months, conducted in both Portuguese and Spanish. Participants of the EDUCARED portal were more than 50,000 people, including teachers, family, school principals, pedagogic coordinators, students and other education professionals. Approximately 5,000 people were active in the platform who contributed more frequently to the portal. Their interests were related to the nine themes proposed by Telefónica Foundation (http://encuentro.educared.org/page/temas): society & employment, technology & education, learning on the digital age, learning and teaching, educator’s role, leading changes, family, lifelong learning, educational visions & trends. Each theme contains four different types of open activities:

- **Debating**: total of 181 presentations with live debates, 102 face-to-face and 79 online webconferences using Adobe Connect;
- **Sharing**: total of 56 studies and research using YouTube video clips and discussion forum;
- **Practicing**: total of 28 practical activities with live workshops using Adobe Connect meetings and webpage comments;
- **Discussing**: total of 41 community discussions on topic of interest to families, students and experts using discussion forum.

The weSPOT environment (where weSPOT states for Working Environment with Social, Personal and Open Technologies), funded by the European Commission, is being developed by a group of nine countries from 2013 to 2015. Its aim is to provide teachers and learners social, personalised open technologies for collaborative inquiry based learning. This environment based on ELGG platform (http://elgg.org/) focuses on a learner-centric approach in secondary and higher education that will enable co-investigators to: personalise their inquiry-based learning environment as well as build, share and enact inquiry workflows individually and/or collaboratively with their peers. This personalised social networking platform allows the creation of community blogs, file repositories, e-portfolio, RSS technology, activities, bookmarks, and groups. Besides these interfaces, it also allows the inclusion of plug-ins such as users, network, user activities, websites, environment and individual inquiries, data collector, hypothesis, notes, conclusions, files, pages, questions, answers and mapping. weSPOT Smart tools aim to support co-learners orchestrate their inquiry workflows through mobile apps, learning analytics support, and social collaboration widgets. Co-learners can then filter inquiry resources and tools according to their own needs and preferences. In addition, they can interact to with their peers in order to reflect on their inquiry workflows, receive and provide feedback, mentor each other, thus forming meaningful social connections that will help and motivate them in their co-learning. weSPOT Smart support tools are grouped in four categories:

- **A mobile personal inquiry manager** supporting a self-directed approach for creating and managing inquiry.
- **A context-aware notification system** that enables the contextualized sharing and notification of real world experiences. Learners can link inquiry projects to certain locations, physical objects, or combinations of contextual factors, notifications can trigger the data collection.
- **A mobile data collection system** supports the direct submission of sensor data and manual measurements into the workflow system, to collect data to test a hypothesis. It also supports
submission of annotations and multimedia materials, to enable reflection, peer support and collaborative inquiries.

- **A mobile inquiry coordination interface** supports inquiry coordinators by giving them access to on-going multi-user inquiries and the contributions of all participants. It allows central dispatching of messages and management of tasks and data.

Eight weSPOT inquiries themes have been developed by partners in nine countries: Food/Health, Biodiversity/Environment, Earthquake, Sea, Energy, Future Education, Innovative research and Economy. This study is part of the Future Education pilot.

The following section presents the methodology. Section 3 introduces data collected in both platforms. Section 4 presents the analytical discussion of EDUCARED data, followed by section 5 that discusses weSPOT data. Section 6 presents a comparative discussion of outcomes and section 7 highlights some final remarks.

**Conceptual Framework**

This qualitative study focuses on key skills for co-learning and co-inquiry in massive and personalised open platforms. C-o-learning - “c”ollaborative “o”pen “learning” (Freire, 1986; Smith 1996) is a concept that gained more meaning due to the creation and interchange of knowledge generated by participants in Web 2.0 (Brantmeier, 2005; Okada, 2008, 2013). This process includes the rapid dissemination, interpretation and sensemaking of relevant content and best practices shared by communities or social networks. It is also enriched by OER, MOOC and open learning platforms that allow participants to share questions that generate collaborative investigation (co-inquiry), relevant resources for increasing understanding and tools for co-authoring collective research. Co-learners and co-investigators can enhance the process of collaborative construction of collective knowledge when their communities or networks create opportunities for reflective practitioners to evaluate content, technologies, methodologies and practices, which include competences and skills. In this context, the role of educators is essential, not only for opening possibilities for the use of more varied and advanced technological resources, but also for the development of skills for open education, lifelong learning through social and personalised networks. Educators’ interventions are also essential for supporting co-learning and co-inquiry for co-learners co-authoring knowledge together.

Co-learning has already been taking place in informal ways mainly among users who master technologies in the context of OER, MOOC and Social Networks. However, these users need to develop more advanced skills and competences in order to take full advantage of both co-learning in Web 2.0 collaborative environments and Web 3.0 semantic platforms (as shown in Table 1). Those users who “learn to c-o-learn” more easily in Web 3.0 platforms may benefit even more in advanced searches, intelligent networks, automated services and personalized environments. Nevertheless, technological skills need to be developed in an integrated way with scientific citizenship skills and for that, the role of educators is essential as a guide in the different stages of research and critical constructive mentor of knowledge and skills that are developed by the students.

Inquiry is a continuous process of raising important questions with experts or specialists, integrating relevant information and generating acceptable lines of thought based on scientific assumptions and knowledge areas. Such a collective process, co-inquiry (Heron, 1996), becomes even more complex. Pedagogic intermediation becomes even more essential. Teachers need to provide support to co-learners based on strategies, methods and orientation, helping them apply what they already know and the concepts they are learning in problem-based activities (Edelson, Gordin & Pea, 1999; Tractenberg, Struchiner & Okada, 2009). This process requires and provides opportunities.
for developing essential skills in scientific inquiry: formulating scientific questions, defining methodologies, collecting data, implementing analysis, discussing results interpretations and communicating research results with scientific explanations for feedback, evaluation and dissemination (weSPOT, 2013).

Co-learning based on co-inquiry aims at the collaborative construction of knowledge, in which co-learners are able to expand their social networks, integrate open learning with collective research and co-author collaborative productions. It is enriched through the wide participation for co-creation and peer review in a much more open, critical and innovative way. Co-learners as co-investigators play important roles, such as massive and personalised platforms participants, intelligent network agents, open community managers, knowledge technology users and key skill practitioners. Those roles can be represented by the “C” model (figure 1), which was developed during this research to summarize seven groups of skills described below:

1. PLAN: goals, time and self-management. Participants are able to identify common objectives and other requirements to achieve expected and unexpected outcomes during the process.
2. USE: various tools - search engines, hypermedia, translators, notifications, upload/download, tags, RSS feeds and applications. Participants are able to use open platforms by searching, aggregating, generating and disseminating content.
3. SHARE: questions, links, ideas, comments, annotations and open content. Participants are able to contribute to the platform including a diversity of files, messages and content in wiki pages.

<table>
<thead>
<tr>
<th>Pedagogy</th>
<th>WEB 1.0</th>
<th>WEB 2.0</th>
<th>Web 3.0</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environment</strong></td>
<td>Closed virtual Platform</td>
<td>Collaborative open Platform</td>
<td>Massive and personalised platforms</td>
</tr>
<tr>
<td><strong>Focus</strong></td>
<td>Information</td>
<td>Collective construction</td>
<td>Intelligent networks and agents</td>
</tr>
<tr>
<td><strong>Content</strong></td>
<td>Generated by institutions</td>
<td>Generated by any user</td>
<td>Focused on individual and communities preferences</td>
</tr>
<tr>
<td><strong>Format</strong></td>
<td>Limited –web pages or files for printing</td>
<td>Open and diversified hypermedia for re-editing or remixing</td>
<td>Semantic interoperable content for managing</td>
</tr>
<tr>
<td><strong>Resources</strong></td>
<td>Browsers</td>
<td>Accessible applications</td>
<td>Intelligent search, localisation, sharing and integration</td>
</tr>
<tr>
<td><strong>Technologies</strong></td>
<td>Information and communication</td>
<td>Knowledge and social networks</td>
<td>Semantic networks, mobile interfaces</td>
</tr>
<tr>
<td><strong>Access</strong></td>
<td>Reading</td>
<td>Edition with shared authorship</td>
<td>Via intelligent agents for knowledge capture and reuse</td>
</tr>
<tr>
<td><strong>Examples</strong></td>
<td>Concept maps in Encyclopaedias</td>
<td>Several types of maps in Wikis, blogs, LMS . . .</td>
<td>Smart search, virtual stores, virtual worlds</td>
</tr>
<tr>
<td><strong>Features</strong></td>
<td>Image or hypertext</td>
<td>Open environments for download, reediting and remix</td>
<td>Semantic Web, intelligent data analysis, Knowledge Technologies</td>
</tr>
<tr>
<td><strong>Learners</strong></td>
<td>Passive readers</td>
<td>Communities of co-learners</td>
<td>Competence and skills developers</td>
</tr>
<tr>
<td><strong>Educators</strong></td>
<td>Knowledge source</td>
<td>Collaborative mentors</td>
<td>Competence and skills facilitators</td>
</tr>
</tbody>
</table>

Table 1. Comparison of Web 1.0 to Web 3.0 evolution and pedagogical approaches (Okada, 2013)
4. MANAGE: networks, support, organisation, feedback, interests, consensus, review and improvement. Participants are able to manage contacts and content for improving the collective discussion.

5. ELABORATE: mapping, interpretations, analysis, synthesis, systematisation and self-assessment. Participants are able to reflect co-produce and assess diverse types of collective representations.

6. DEVELOP: scientific questions, literature review, methodology, procedure, analytic discussion, scientific production, peer-review and dissemination. Participants are able to improve their learning through a set of activities for scientific research.

7. CREATE: theories, best practices, methodologies, policies, higher impact, and derived research. Participants are able to disseminate their co-authorships and exploit new work or studies through new publications and research opportunities.

Methodology

The aim of this research work is to investigate key skills for co-learning and co-inquiry in the digital age in open platforms, particularly massive online portals and social, personal inquiry environments.
This paper reports an exploratory multicase study based on cyber-ethnography, as the study object is not physically delimited, but based on the cyberspace (Ward, 1999; Keeley-Browne, 2011). Such virtual space is constituted by people (educators-co-investigators, in the case of weSPOT and educators co-learners in the case of EDUCARED Forum) who are interconnected by dynamic relationships capable to build a symbolic cognitive system (Lewgoy, 2009) that emerges in online open platforms, such as a massive educational portal and a personalised inquiry environment.

Among all research methods, ethnography seems to be the most appropriate approach to attempt to understand interactions that are developed in virtual communities. The application of ethnography in online environments is also known as virtual ethnography or cyber-ethnography, which becomes appropriate for observing virtual messages in order to obtain knowledge about symbolic meanings, attitudes or patterns of specific groups (Kozinets, 2009).

For this research, cyber-ethnography was used both as an asynchronous observation method (as the data collection from the EDUCARED Forum was conducted offline) and synchronous observation method (during 20 web conferencing sections conducted from April to November 2013).

The informative basis allowed an interpretative investigation approach, exploring the way digital technologies support needs, skills, aspirations and circumstances of both co-learners and communities in their work practices. In this process, all participants were considered as co-learners and co-investigators in the collective study, where theoretical assumptions are interwoven with reflexive collaborative actions.

Data analysed in the EDUCARED portal comprises the thematic forum entitled “New approaches for assessment of collaborative open learning”, which was moderated by a facilitator from March to April 2013 as part of Theme 6 of the conference “How to conduct changes in educational centres”, but the interactions occurred until December 2013.

Figure 2 shows the online portal with the synchronous and asynchronous activities that are part of this research. Data analysed in this forum comprised 129 messages posted during a period of 9 months, from March to December 2013.

A total of 40 participants interacted in the discussion forum about new approaches to assessment in co-learning era using three languages: Spanish, Portuguese and English. Most part of group interaction happened between March and May 2013. During this period it was accessed by 1870 members of the portal. In the discussion forum, active participants shared questions, commented on posts, suggested links with media, established connections with papers and shared concept maps. Five participants proposed to organise and group relevant information in the forum. This initial organisation facilitated the systematization of knowledge constructed by the group, but the challenge was to update it. These participants promoted co-learning through collaborative actions by developing: (1) a list of references shared by participants, (2) a conceptual map of key terms discussed in the forum (3) a graphical visualization of the network interaction, (4) word clouds with key ideas shared in the debate (5) a synthesis of the reflections through a collective paper and videoclip.

Based on shared mediation, which was initialized by facilitators in charge of the discussion forum (who included the author of the activity, coordinators of the event in Spain and Brazil), it was possible to observe group self-management as the participants acted in different roles.

As competence-based assessment was one of the most discussed topics in the forum, some participants suggested using co-inquiry in order to approach the topic more deeply with the following question: Which are the key competences for co-learning and co-inquiry in the digital age? This issue became a collective objective for the interested participants. Participants, however, found difficulty in keeping the contributions in the discussion forum organised due to the increasing number of messages.
In order to facilitate this process, the facilitator suggested using another platform, weSPOT (*Working Environment with Social Personal and Open Technologies for inquiry based learning*). Twenty-three members of EDUCARED platform started also using weSPOT from May to November 2013.

Figure 3 shows the inquiry based environment where previous discussions were deepened and new texts were produced using wiki with various feedback from participants through comments. The interaction was also organised by inquiry phases: (1) scientific questioning, (2) methodology planning, (3) literature review (references), (4) research procedures: conceptual mapping, reflective group discussion and platform interactions analysis, (5) systematization of a report and questionnaire (6) peer review and dissemination.

weSPOT participants used a wiki to describe their individual projects related to the collective theme of key competences and skills for the digital age. Most of the interactions reverberated the co-inquiry effort established among the participants and their study plans. Constant constructive feedback, which was initially offered to individual projects by the facilitator, was evidenced among all the participants of the group identifying convergent topics among their individual researches.

Participants continued sharing questions, comments, links to media, connections with papers and maps in both platforms: EducaRed and weSPOT. However, they did that in a systematised manner according to individual and collective interests as the weSPOT environment enabled them to organise...
information in a wiki, presented by inquiry, theme and chronological order. They were able to follow relevant messages through notifications and provide feedback in both environments. They were able to embed images, graphics and videoclips in both platforms. It was possible to notice that some participants used open content searching interfaces, translators for multilingual forum and other applications to create visualisation and maps.

The perception of these varied forms of interaction led the production of the reflections that are presented here and established new bases for deepening the studies on co-learning and co-inquiry key competences for the 21st century. Thus, the categories for analysing the interactions in both platforms comprise the skills that emerged in both open environments. These interactions were analysed through Bardin’s Content Analysis (2007) and then, listed in seven groups of skills (analytical dimensions), whose evidence could be identified through their varied components (instruments) as illustrated in Table 2.

The line of thought assumed in this paper follows the arguments of Durand (2000), Cheetham & Chivers (1998, 2005) and European Communities (2007), which define competences as a set of knowledge, skills and attitudes that are adequate to the consecution of specific aims. Four key competences (presented in Table 2) were identified in the literature review conducted by participants in weSPOT environment as the most frequent key issue for the 21st century or digital age: collaboration-communication, critical-creative thinking, digital literacies and scientific reasoning.

*Open Praxis*, vol. 7 issue 1, January–March 2015, pp. 83–102
Table 2. Collective analysis or research reports

<table>
<thead>
<tr>
<th>Competences</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>T1</td>
</tr>
<tr>
<td>Digital Literacy</td>
<td></td>
</tr>
<tr>
<td>Information Literacy</td>
<td>X</td>
</tr>
<tr>
<td>Media Literacy</td>
<td>X</td>
</tr>
<tr>
<td>TIC</td>
<td>X</td>
</tr>
<tr>
<td>Technologies</td>
<td></td>
</tr>
<tr>
<td>Digital skills</td>
<td></td>
</tr>
<tr>
<td>Communication-collaboration</td>
<td></td>
</tr>
<tr>
<td>Communication</td>
<td>X</td>
</tr>
<tr>
<td>Collaboration</td>
<td>X</td>
</tr>
<tr>
<td>Communication</td>
<td></td>
</tr>
<tr>
<td>Critical creative thinking</td>
<td></td>
</tr>
<tr>
<td>Critical thinking</td>
<td>X</td>
</tr>
<tr>
<td>Creativity</td>
<td></td>
</tr>
<tr>
<td>Scientific reasoning</td>
<td></td>
</tr>
<tr>
<td>Scientific Literacy</td>
<td></td>
</tr>
<tr>
<td>Inquiry</td>
<td></td>
</tr>
<tr>
<td>Academic skills</td>
<td></td>
</tr>
</tbody>
</table>

Legend of References

<table>
<thead>
<tr>
<th>Paper</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>T2</td>
<td>Government of Alberta (2010)</td>
</tr>
<tr>
<td>T3</td>
<td>Hewlett (Finegold &amp; Notabartolo, 2010)</td>
</tr>
<tr>
<td>T4</td>
<td>OECD (Ananiadou &amp;Claro, 2009)</td>
</tr>
<tr>
<td>T5</td>
<td>Cisco, Intel &amp; Microsoft (Binkley, et al., 2010)</td>
</tr>
<tr>
<td>T6</td>
<td>National Research Council - Washington (2011)</td>
</tr>
<tr>
<td>T7</td>
<td>UNESCO (2011)</td>
</tr>
<tr>
<td>T8</td>
<td>The Bill &amp; Melinda Gates Foundation (Conley, 2007)</td>
</tr>
<tr>
<td>T9</td>
<td>Mc Graw Hill (Beers, 2011)</td>
</tr>
<tr>
<td>T10</td>
<td>OECD (2005)</td>
</tr>
<tr>
<td>T11</td>
<td>European Communities, 2007</td>
</tr>
</tbody>
</table>
These competences, based on the literature review and skills that emerged in the open virtual environments (Table 2), were identified as those that co-learners presented for developing co-learning and co-inquiry of collective productions.

Table 3. Co-learning and co-inquiry key competences for the Digital Era

<table>
<thead>
<tr>
<th>Skills</th>
<th>Competences</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Analytical)</td>
<td>(Instrumental)</td>
</tr>
<tr>
<td>Planning objectives</td>
<td>Digital Literacy</td>
</tr>
<tr>
<td></td>
<td>Collaboration-communication</td>
</tr>
<tr>
<td></td>
<td>Critical-creative thinking</td>
</tr>
<tr>
<td></td>
<td>scientific reasoning</td>
</tr>
<tr>
<td>Using various Technical interfaces</td>
<td>individual</td>
</tr>
<tr>
<td></td>
<td>searching</td>
</tr>
<tr>
<td></td>
<td>hypermedia navigation</td>
</tr>
<tr>
<td></td>
<td>translating</td>
</tr>
<tr>
<td></td>
<td>Notification</td>
</tr>
<tr>
<td></td>
<td>Uploading/downloading</td>
</tr>
<tr>
<td></td>
<td>bookmarking/tagging</td>
</tr>
<tr>
<td></td>
<td>Aggregating</td>
</tr>
<tr>
<td></td>
<td>Application</td>
</tr>
<tr>
<td>Sharing Contributions</td>
<td>questions</td>
</tr>
<tr>
<td></td>
<td>Links</td>
</tr>
<tr>
<td></td>
<td>Ideas</td>
</tr>
<tr>
<td></td>
<td>Comments</td>
</tr>
<tr>
<td></td>
<td>Annotations</td>
</tr>
<tr>
<td></td>
<td>Open content</td>
</tr>
<tr>
<td>Interacting for co-construction</td>
<td>Networking</td>
</tr>
<tr>
<td></td>
<td>Support</td>
</tr>
<tr>
<td></td>
<td>Organisation</td>
</tr>
<tr>
<td></td>
<td>Constructive feedback</td>
</tr>
<tr>
<td></td>
<td>Interests</td>
</tr>
<tr>
<td></td>
<td>consensus</td>
</tr>
<tr>
<td></td>
<td>improvement</td>
</tr>
</tbody>
</table>
Discussion of Results

Illustrative tables with colour codes, as showed in Table 3, were elaborated as a result of content analyses of the discussion forums at EDUCARED portal (table 4) and wiki pages at the inquiry environment at weSPOT (table 5). Results describe qualitative data evidenced according to their relevance and frequency.

**Encuentro. EDUCARED Portal (Discussion Forum)**

Table 4 is a result of the analysis of the forums and the web conferences at EDUCARED portal. It synthesises the skills that were more prominent in the environment.

At EDUCARED portal, the most active participants shared their interests, which allowed the community to identify common interests: exploring OER (text, forum, videoclip), increasing understanding on the topic through collaborative discussion. Participants did not present any questions related to technical difficulties with the EDUCARED portal. Participants not only shared multimedia files and several reference papers, but also discussed about content shared by other participants. Digital literacy was evidenced by co-learners who showed the following skills:

**Skills Competences**

<table>
<thead>
<tr>
<th>Skills</th>
<th>Competences</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Analytical)</td>
<td>(Instrumental)</td>
</tr>
<tr>
<td>Elaborating Global and Individual vision</td>
<td>Digital literacy</td>
</tr>
<tr>
<td></td>
<td>Collaboration-communication</td>
</tr>
<tr>
<td></td>
<td>Critical-creative thinking</td>
</tr>
<tr>
<td></td>
<td>scientific reasoning</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>mapping</td>
</tr>
<tr>
<td></td>
<td>Interpretation</td>
</tr>
<tr>
<td></td>
<td>Analysis</td>
</tr>
<tr>
<td></td>
<td>Synthesis</td>
</tr>
<tr>
<td></td>
<td>Systematisation</td>
</tr>
<tr>
<td></td>
<td>self-reflection</td>
</tr>
<tr>
<td>Developing Scientific co-inquiry</td>
<td>scientific questioning</td>
</tr>
<tr>
<td></td>
<td>methodology planning</td>
</tr>
<tr>
<td></td>
<td>literature review</td>
</tr>
<tr>
<td></td>
<td>Procedures/ data collection</td>
</tr>
<tr>
<td></td>
<td>Analytical discussion</td>
</tr>
<tr>
<td></td>
<td>Scientific production</td>
</tr>
<tr>
<td></td>
<td>peer review</td>
</tr>
<tr>
<td></td>
<td>Research dissemination</td>
</tr>
<tr>
<td>Innovating throughpraxis</td>
<td>Theoretical principles</td>
</tr>
<tr>
<td></td>
<td>transformative practices</td>
</tr>
<tr>
<td></td>
<td>Significant methodologies</td>
</tr>
<tr>
<td></td>
<td>recommendations/policies</td>
</tr>
<tr>
<td></td>
<td>Impact/citations</td>
</tr>
<tr>
<td></td>
<td>Derived research</td>
</tr>
</tbody>
</table>

*Open Praxis, vol. 7 issue 1, January–March 2015, pp. 83–102*
1. **searching**: sharing open content that might be found using advanced search engines (e.g. Google, Creative Commons, etc.);

2. **using hypermedia navigation**: discussing multimedia content shared by other participants;

3. **translating**: communicating in other languages using translators to read and reply messages in other languages;

4. **using notification**: replying messages instantly after long period based on notifications;

5. **downloading files**: shared by other participants as well as tagging or bookmarking URLs;

6. **aggregating new content**: related to common interests using probably RRS feeds;

7. **using new applications**: developing concept maps, graphs or visualization by using applications such as cmap tools, wordle, and many eyes.

Active and engaged participants frequently contributed to the forum demonstrating initiative of sharing:

- **questions**: including issues according to the topic being discussed;
- **links**: presenting interesting videoclips, images and maps;
- **ideas**: replying the discussion with new suggestions or own thoughts;
- **comments**: providing useful feedback to colleagues and facilitators;
- **annotations**: including specific notes about content or ideas;
- **open content**: including open license image, videos or papers.

These actions not only contributed to develop Digital Literacy, but also communication-collaboration and critical-creative thinking skills.
In the extract below, a participant demonstrates his competence in communication-collaboration and also critical-creative thinking as a result of explicit contributions and interactions for co-construction, showing his aptitude to improve his own ideas and also the ideas of other participants. Participant 5 included reflections, suggested readings and registered new questions directed to Participant 2 in appropriate space in the forum allowing other participants to follow the content in a coherent way.

...it seems we are talking about communication & interaction with the same meaning but reading it, I understand that interaction is more communicational (…). We definitely can communicate and not interact! And now I reflect if we can interact without communicating? I don’t think so.

I also reflect about (…) co-responsibility of inter-agents. I wonder if we can interact with those who only emit closed messages. (Participant 5 comments about Participant 2’s reflections and shares it with the group).

Other examples, despite less frequent in the forum, refer to the systematization of both global and individual vision—a skill which relates to both collaboration-communication and critical-creative thinking.

In the following message, Participant 4 offers positive stimulus (“liked”, “loved”, “thanks a lot”) and includes a question as a scientific investigation proposal, which opens opportunities to new reflections. The participant also suggests collective integration of ideas with a mind map of the previous discussion (Figure 4), which allowed participants to observe his/her own comprehension of the theme and favoured the comprehension of the whole group with the visualization of the map that was later re-used by other participants.

Dear colleagues...

I liked all answers as they enabled real collective construction.
... I loved the video and all the proposals. Could we develop a document (OER) of collective authorship with your support about “New Approaches to Assessment through co-learning key competences”? I can collaborate with a mind map in Portuguese during this activity to integrate our collective knowledge. Deepening the approaches discussed here and bringing practical situations integrated with ICT will enrich this debate. Thanks a lot for this rich debate and co-learning opportunity. (Participant 4)

**weSPOT inquiry environment**

During the analysis of the wiki page on weSPOT inquiry environment it was possible to highlight some registers and reflections of the individuals involved in this study that evidenced skills and competences that emerged from co-learning in inquiry environments. These competences are indicated on table 5.

In the inquiry environment, participants showed as their objective the development of critical-creative thinking and ethical-scientific reasoning for the production of a literature review table and a map of key skills according to the proposal made by Participant 4. In general, participants showed the same attitudes as the ones shown in EDUCARED Portal. Nevertheless, certain difficulty in appropriating all technical interfaces of the environment emerged particularly from the participants who were not used to social personalised platforms and co-authoring widgets. Some technical questions were shared in the discussion forum related to creating sub-wikis, embed hypermedia in the wiki, collecting and tagging information. Another observation was that some participants started

| Table 5. Occurrence of competences and skills in the wiki page at weSPOT |
|---|---|---|---|
| **weSPOT COMPETENCES** | Digital Literacy | Collaboration-communication | Critical-creative thinking | Ethical-scientific reasoning |
| SKILLS | | | |
| Planning objectives | | | |
| Using various Technical interfaces | | | |
| Sharing Contributions | | | |
| Interacting for co-construction | | | |
| Elaborating global and individual vision | | | |
| Developing Scientific co-inquiry | | | |
| Innovating through praxis | | | |

*Open Praxis, vol. 7 issue 1, January–March 2015, pp. 83–102*
practicing different skills related to critical-creative thinking particularly related to organising and systematising global and individual contributions:

- **mapping**: participants created different visualization of key skills by using applications such as wordle, mindmeister and many eyes in separated wikis for aggregating comments;
- **interpretation**: reflective comments on multimedia resources and own thoughts particularly on collaborative discussion and production;
- **analysis/synthesis**: action of breaking texts in parts and integrating it to obtain a new and more meaningful overview;
- **systematisation**: integrating group contribution (collective knowledge) through narratives (paper, video, presentation, etc.);
- **self-reflection**: action of reflecting about one’s own ideas, thinking, participation and individual or collective constructions.

Another group of skills related to scientific reasoning enabled co-learners to complete their research project or case studies as well as co-author publications through conference papers and posters. They were able to develop:

- **scientific questioning**: several questions to conduct collective or individual scientific research;
- **literature review**: action of conducting a wide study of literature related to the theme using technological resources (eg.: Mendeley);
- **methodology planning**: action of establishing methods, instruments and procedures for investigations such semi-structured questionnaires, qualitative interviews and focus groups;
- **data collection**: action of implementing interview in both environments, obtaining feedback through comments and online meetings;
- **analysis based on evidence**: action of analysing data and identifying evidences which were discussed among peers;
- **systematisation**: action of preparing scientific narrative with coherent arguments connected to sufficient evidence.
- **peer review**: action of obtaining feedback from experts in the topic;
- **dissemination**: action of communicating results, improving future steps through feedback.

The following extract presents evidence of collaboration-communication, critical-creative thinking and scientific reasoning competences. We can observe that Participant 9 describes his/her contribution with collective integration of ideas about collaboration, translates (language), improves his/her own ideas as well as the groups’ with greater deepening of the term competence. The following images (Figures 5, 6 and 7) show the collaboration of this participant in several dimensions, according to the example below.

*I synthesised our discussions on collaboration competence and substituted the previous text that was originally in English. I added my contributions (...), translated and already adapted so that we can continue our studies and start the construction of the dictionary. It is a new starting point for this competence.*

( Participant 9)

**Conclusion**

This research evidenced that the competences that emerged from the analysis were developed through co-constructed knowledge in both intrinsic and extrinsic manners in cyberspace as a result of participants’ skills and attitudes. On the other hand, skills and abilities were established through the analysis of online environments from their experiences in the field and from a practical-theoretical reflexive perspective.
In general, interactions reverberated the co-inquiry that was assumed by participants and their study plans. Constant constructive feedback, initially offered to projects by the mediator in charge of the online environments, was evidenced among all participants in the group, who naturally found convergent points among their research projects.

As it had occurred in EDUCARED forum, weSPOT participants continued sharing questions, comments, links with media, connections to papers and maps. However, they did not do it randomly,
but in a systematized way according to their individual and collective interests once the environment allows the organisation of information in the wiki, which are presented according to inquiry, theme and chronological order.

Another result of this investigation was that the portal enabled the more explicit development of digital literacies, which may be related to the fact that it comprises a more popular and simpler interface (forum). In the co-inquiry environment, participants who showed more familiarity with digital technologies had greater opportunities to develop other competences related to scientific literacy.

Besides twelve individual inquiry projects and one collective research in weSPOT platform, four conference papers, six students’ research posters, five conference presentations and three doctoral theses in Brazil and Portugal were produced. The community also developed a research questionnaire and, a report that was shared in the final event promoted by Telefónica Foundation which was extended as a chapter of the OER & Social Networks book (Okada, 2012; Okada, Meister & Barros, 2013) as well as a book published in Portugal (Okada, 2014).

Aiming at more scientific rigor for this study at the weSPOT environment, the community developed an instrument of analysis denominated model C (Figure 1), which has been used in various research publications (Calonego, Serra & Okada, 2014; Correa, Rabello & Okada, 2014; Souza, Okada &
Silva, 2014; Rabello & Okada, 2014) both collective and individual systematizations of the interactions and collaborative participations were carried out through the integration of ideas, different mapping and argumentative reflection.

Future work will provide a continuation of this research observing how the co-learning and co-inquiry network allows co-learners to use model C for planning, analysing and developing or practicing key skills for collaborative learning in the digital age.

Acknowledgments

weSPOT project is funded by European Community’s Seventh Framework Programme (FP7/2007-2013) under grant agreement No. 318499. We are grateful to Cintia Rabello, who contributed as a peer reviewer before submission.

References


Strength in Numbers: Learning Together in Online Communities—
A Learner Support System for Adult First Nation Students and
Practitioners

Heather Sanguins
Wilfrid Laurier University (Canada)
sang3140@mylaurier.ca

Abstract
Longstanding calls for return to self-government and continuing alienation of First Nations’ youth from mainstream educational systems point to the need for provision of adult education that serves First Nations’ needs. An adaptable and culturally coherent learner support system for adult education programs for First Nation students and practitioners is proposed that can be adapted for use by different groups and for different subjects to support self-determination and self-government. Using online Communities of Interest (for learners) and Communities of Practice (for practitioners) is culturally appropriate and would facilitate engagement of students and practitioners, particularly in view of the importance that First Nations place on community. Establishment and evaluation of a pilot project to test the approach is recommended. Because of its relevance to self-determination and self-government, bookkeeping is recommended to be the first curricular subject to demonstrate the learner support system.

Keywords Adult education; Bookkeeping; Communities of Interest; Communities of Practice; Constructivist learning; Sociocultural theory

Introduction
Longstanding calls for self-determination and return to First Nation self-government (Canada Library of Parliament, 1999), and continuing alienation of First Nations’ youth from mainstream educational systems in Canada (Battiste, 2004, p. 2; Belhumeur, Closs & Kaun, 2005; Canadian Council on Learning, 2009; Kovacs, 2009; Statistics Canada, 2001, 2006a, 2006b, 2011, 2013) point to the need for provision of adult education that serves First Nations’ needs while being politically relevant and culturally coherent. First Nations’ experience of conventional education strongly suggests that adult learners will need support both from educational programming and from each other in order to succeed. Accordingly, an adaptable and culturally coherent learner support system of online communities for First Nation adult students and practitioners is proposed. The objective is to support First Nation adult learners in order for them to engage in running their own affairs for purposes of self-determination and self-government. The proposal is innovative as it provides a culturally relevant way to support adult learners (who are great in number because of the high school leaving rate) to practically advance First Nations’ self-deterministic movement.

The importance of community for First Nations is discussed. It is argued that use of serial online communities of interest (for learners) and communities of practice (for practitioners) is culturally appropriate and will facilitate engagement of students and practitioners in rural and remote, as well as isolated urban, locations. Issues associated with the digital divide (for example, see Canadian Council on Learning, 2009) are recognized since implementing online communities and e-learning requires the infrastructure required to deliver broadband/high speed Internet access. An excellent example of broadband provision is the Kuhkenah Network (K-Net) in North-Western Ontario (K-Net Services, n.d.). Further, the Canadian government recently announced plans to spend $305 million...
over five years to extend broadband Internet service into rural and northern communities (Canada Department of Finance, 2014). Accordingly, as a result of these and other measures, it is assumed that broadband access will be available.

**Background**

The relationship between conventional education and First Nations is complex. Scholars have pointed to insufficient First Nations content in curricula (Godlewska, Moore & Bednasek, 2010). Reports have reported a lack of First Nations input into curricula and pedagogies (Standing Senate Committee on Aboriginal Peoples, 2011; National Panel, 2012). Researchers have argued that omission of Canada’s treatment of Aboriginal populations from curricula perpetuates self-serving ignorance among Canadians, and perpetuates injustices (Godlewska, Moore & Bednasek, 2010).

While agreeing that these injustices and omissions should be addressed in Canadian education systems, given the more than 35 years of reports concerning the inadequacy of primary and secondary education for First Nation students (Standing Senate Committee on Aboriginal Peoples, 2011, p. 1), the challenges inherent in First Nation adult education (Haig-Brown, 1995), and the need for change in post-secondary education (Stonechild, 2006), it is argued that we should move forward with adult education initiatives immediately rather than waiting for a (less im-)perfectly educated generation of First Nation citizens. Continuing high school leaving rates (Statistics Canada, 2001, 2006a, 2006b, 2011, 2013) lead to illiteracy and innumeracy among Aboriginal adults who are, therefore, ill-equipped to contribute to community self-government, for example, through managing band finances. The literacies and confidence required for First Nation adults to build capacity for increased self-determination and self-government may be strengthened by undertaking culturally appropriate approaches to education and online communities to support learners.

**Definitions**

The online communities will support learners first, while they are students, and later, when they are practitioners. It is anticipated that students’ curriculum will be delivered online as well. Accordingly, brief definitions of three relevant terms are provided next. The term e-learning refers to distance education that is made available to students using Internet technologies (Rana, Rajiv & Lal, 2014, p. 20). E-learning is considered to have many benefits because it promotes self-directed learning; it provides asynchronous and synchronous open access that are very advantageous to many adult learners; and it can engage students and practitioners in ongoing professional development (Lewis, Cidon, Seto, Chen & Mahan, 2014, p. 150). An early study of the evolution of distance education observed that distance education is appropriate for all students who may have been marginalized for a variety of reasons, and who themselves are already distanced from traditional education for psychological, geographical, or cultural reasons (Ohler, 1991, p. 25). Waite and Fowler (2002) have pointed to the benefits of synchronous and asynchronous availability of Internet-based distance education delivery (p. 8). Distance education has the potential to reduce financial and other barriers (Sanchez, Stuckey & Morris, 1998, p. 3, as quoted in Al-Asfour & Bryant, 2011, p. 45). Early Canadian research links distance education and sustainable economic development (Wall & Owen, 1992, as quoted in Al-Asfour & Bryant, 2011, p. 45). A related concept is open learning. Bureau (2000) reported that a key aspect of open learning is independent study (p. 280). For First Nation adult learners, independent study does not mean learning in isolation from, or at the exclusion of, community, but instead means the ability to choose how to engage with a community of learners. Since many First Nation adult learners would need supplementary education in order to participate in self-determination and self-government, it is important to consider some principles and assumptions of adult education.
Adult Education Principles and Assumptions

In a foundational discussion of androgeny or adult education, Knowles (1980) identified four primary differences between adult and child learners that have significant implications for adult education: the concept of the learner, role of learners’ experience, readiness to learn, and orientation to learning (pp. 43–44). Of these implications, the concept of the learner as variably dependent and self-directed, and orientation to learning as needing to be readily applicable (Knowles, 1980, pp. 46, 53) continue to have particular relevance to designing and delivering educational programs for adult First Nation learners. First, it is possible that because of many students early withdrawal from traditional education, that, in fact, these concepts may need to be addressed in the program directly in order to reduce learners’ anxiety sufficiently for them to move forward with their learning precisely because of having internalized “failure.” Second, like other adult learners, adult First Nation learners may approach educational activities from a problem- or performance-centred viewpoint (Knowles, 1980, p. 53), because of their social responsibilities within their families and communities, regardless of the nature of their experiences in the educational system. Merriam (2001) reported that andragogy and self-directed learning are consistently represented in models and definitions of adult education (p. 3). Self-directed learning provides a clear link between adult education, constructivist learning, and online education.

The Need for More Research

Despite its important potential, little research on this topic has been conducted to date. In the context of the United States, a small study found that learning online through the Montana Digital Academy (MTDA) was effective for the eight college-bound Native American students who participated (Butler Kaler, 2012, p. 60). The author noted that “research on this topic is practically non-existent” (Butler Kaler, 2012, p. 60). Another small study in the United States explored the experiences and perceptions of Lakota Native American students taking a college-level online course in business (Al-Asfour & Bryant, 2011, p. 43). The authors of this study also noted that, although considerable research has been carried out concerning online education, theirs is the first study regarding online education at any Lakota tribal college (Al-Asfour & Bryant, 2011, p. 43). It was reported that family obligations and commitments must be met before a Native American individual undertakes online education (Sanchez, Stuckey & Morris, 1998, p. 3, as quoted in Al-Asfour & Bryant, 2011, p. 45). Online education brings education to adults in a way that can accommodate adult learners’ family and community responsibilities and their specific cultural values. The next section considers the term community and its importance to First Nation learners.

Importance of Community

The term community has many meanings. Some definitions have to do with geography, others with place, and still others with shared ethnicity. One useful definition of “community” (2014) is “the people of a district or country considered collectively, especially in the context of social values and responsibilities.” Since, for many First Nation peoples, collective relationship is more important than individualism, First Nations have their own concepts of, and contexts for, community. Battiste (2000) noted that “collective community” is a traditional attitude of many Aboriginal peoples (p. 207).

Serving community is understood to be one of the ethical responsibilities of First Nation people (Manitoba First Nations Youth Council, 2002). In addition to their immediate family responsibilities, adult First Nation learners also will have “community obligations” that have to be met from time to time, such as a death within the community (British Columbia Ministry of Advanced Education
Online communities for learners can implement, recognize, value, and support many aspects of First Nations’ values and customs. Next, a conceptual framework for the communities is presented.

**Conceptual Framework**

The learner support system is usefully understood as dynamically changing over time in relation to learners’ needs, as is demonstrated in Lowe’s (2011, p. 77) Providing Academic and Relational Support (PARS) model (figure 1). A learner-focused conceptual framework, the PARS model recognizes that the need for academic support declines as relational support and self-directedness increase (Lowe, 2011, p. 77). In this model, the term self-directedness means both self-direction and “learning how to learn” skill development (Lowe, 2011, p. 77). The PARS model is informed by Vygotsky’s (1978) concept of scaffolding (Lowe, 2011, p. 82), which derives from his socio-cultural theory of mind and concept of zone of proximal development (ZPD) (Shabani, Khatib & Ebadi, 2010, p. 240).

The PARS model suggests that academic support declines, and the need for relational support rises and then falls during four phases: guiding, clarifying, encouraging, and monitoring (Lowe, 2011). Over the same timeframe, learners’ self-directedness grows as they pass through stages of being dependent, independent, and inter-dependent. The concept of interdependence points to the cultural appropriateness of this model since relationship and connectedness are inherent in many First Nations’ worldviews. For example, Kirkness and Barnhardt (1991) described “[t]he [f]our

![Figure 1: Providing Academic and Relational Support (PARS) model](image)

*Figure 1: Providing Academic and Relational Support (PARS) model*

*Source: Lowe (2011) (Reproduced with permission of author)*
R’s- Respect, relevance, reciprocity, [and] responsibility” of First Nations and higher education (p. 1). Baskin (2006) confirmed that “[i]n Aboriginal world views, a focus on individual and collective responsibility for all members of one’s community is highlighted.” In the context of Native American communities, Weiterman Barton (2013) has reported that “sharing is a valued characteristic” (p. 142). Further, the PARS model is also useful because of the cultural appropriateness of constructivist theory for First Nation learners.

**Cultural Appropriateness of Constructivist and Sociocultural Theories**

As increasing numbers of educators explore the use of virtual places for learners, it is important to consider which approaches can provide culturally appropriate and effective ways to reach learners in all their diversity. The large numbers of school leavers demonstrate that traditional mainstream Canadian education is not well suited to many First Nation learners. The social and cultural needs of adult First Nation learners, many of whom left school early, also challenge traditional education. Through its focus on distinguishing between observers, participants, and agents; analysing communication from symbolic, imaginative, and real perspectives, and demand for practitioners’ critical reflection, interactive constructivism allows educational programs “to take into account the different versions of knowledge constructed in different contexts of time and place” (Reich, 2007, pp. 7, 8). Hung, Lim and Jamaludin (2011) have argued that constructivism addresses how “identity interplays with learning from the point of view of the learner and his/her social community” (p. 161). This interplay is especially relevant for the cultural context of First Nation learners, for whom “[s]elf and community cannot be divorced” (Hung, Lim & Jamaludin, 2011, p. 161). Constructivism is not limited to formal, classroom-based traditional education, but is extensible to informal learning, such as that which can take place in an online community. In a study of the virtual world of Second Life, Girvan and Savage (2010) found that, as use of “Communal Constructivism” grew, “learners collaboratively constructed knowledge for themselves as a group and for others” (p. 342). This finding confirms the importance of engaging a constructivist approach in the design and delivery of an educational program for adult First Nation learners.

Like constructivist theory, sociocultural theory provides a culturally coherent approach for First Nation learners. Scholars have found that socio-cultural theories accord with an indigenous pedagogical paradigm (Sanchez, Stuckey, & Morris, 1998), and with indigenous ways of learning, which are influenced by culture and, as such, are social and collective rather than individual in nature (McLoughlin & Oliver, 1998, p. 127, both as quoted in Weiterman Barton, 2013, p. 44).

Further, Internet-based approaches to learning are consistent with culturally appropriate pedagogies. Weiterman Barton’s (2013) Standard Model of Indigenous Learning comprised five “model threads” –place, storytelling, intergenerational interaction, experience, and interconnectedness (pp. I, 56–68)– all of which are accommodated by online communities.

**Online Communities of Interest and Practice**

The purpose of the learner support system is to support and instantiate the values of a First Nation as its members develop their abilities to govern themselves. Since the success of this initiative requires more than straightforward skills transfer, knowledge building is essential to develop the people and the processes that will help their respective First Nation survive and then thrive. In this way, knowledge building supports the value of self-reliance (National Indian Brotherhood, 1972, p. 2).

The learning support system needs to engage and sustain online community-building by creating an online environment that fosters the adult learners’ sense of community, first as students and
then as practitioners. Since members' level of expertise and pressing day-to-day concerns will differ, two online communities will be established: a Community of Interest (CoI) for the students and a Community of Practice (CoP) for the practitioners.

Community of Practice has been defined as "a persistent, sustained social network of individuals who share and develop an overlapping knowledge base, set of beliefs, values, history and experiences focused on a common practice and/or mutual enterprise" (Lave & Wenger, 1991, as quoted in Barab, 1998). Barab (1998, n.p.) identifies CoP characteristics that are important for the learner support system: "(1) shared knowledge, values, and beliefs; (2) overlapping histories among members; (3) mutual interdependence; and (4) mechanisms for reproduction."

The difference between the CoI and the CoP will be the transience of the participants in the CoI. The CoI members are students who eventually will graduate and become practitioners. For the CoI, the community continues while the members migrate. Following graduation, CoI members will migrate to the COP to join their new practice community. Co-creating learning and practicing within online communities will build capacity within First Nations to meet calls for autonomous functioning and self-government (Canada Library of Parliament, 1999) and for increased self-determination in education (Assembly of First Nations, 2010; Chiefs of Ontario, 2012).

**Recommendations and Next Steps**

Canadian governments at various levels are beginning to consider First Nations’ claims to self-determination and self-government as alternatives to the status quo, which evidence suggests is not working. The scarcity of research into adult education points to the need to propose such an undertaking. The next step would be to pilot the proposed learner support system to support the students of a curricular program such as bookkeeping. This recommendation derives from First Nations’ desire for self-government and the importance of community, which naturally intersect in online communities.

Aboriginal Affairs and Northern Development Canada [AANDC] (2014) stressed that accountability commitments are key features of Aboriginal self-governments’ relationships with their citizens as well as with provincial/territorial, and federal levels of government. As a result, self-government agreements “must address the need to strengthen key elements of governance, including fiscal and management regimes” (AANDC, 2014, n.p.). Accordingly, since bookkeeping is fundamental to fiscal regimes and since fiscal regimes are necessary to achieve self-government, then bookkeeping is a suitable subject to be taught to adult First Nation learners.

In a recent systematic scoping review of evaluation frameworks in, i.a., ecohealth, health care, education, and business, McKellar, Pitzul, Yi and Cole (2014) found that the frameworks they examined were not generalizable because of limited applications; however, their findings could be used to refine CoP evaluation frameworks. Like pedagogical approaches, evaluation must be culturally appropriate and specific to the First Nation involved. A culturally appropriate CoI/CoP evaluation framework should be incorporated within the pilot project. Finally, both the educational program and the learner support communities need to be culturally appropriate, because it is not the role of the CoI/CoP to redress deficiencies in curriculum or pedagogy.

**Conclusion**

In conclusion, this paper describes a proposal for an innovative means of supporting adult First Nations learners from being students to practitioners, as they gain knowledge that will let them...
engage in increasing self-determination toward eventual self-government. In order to be culturally appropriate and pedagogically effective, the learning support system is informed by a learner-centred conceptual framework, Lowe’s (2011) Providing Academic and Relational Support (PARS) model that is informed by Vygotsky’s (1978) concept of scaffolding (Lowe, 2011, p. 82), which derives from his socio-cultural theory of mind and concept of zone of proximal development (ZPD) (Shabani, Khatib & Ebadi, 2010, p. 240). Employing scaffolding and engaging in constructivist approaches within the communities will maintain a culturally appropriate focus on the learners.

Since relationships, connectedness, and community are fundamental to First Nations’ worldviews—which Graham (2002) has termed “relational” (as quoted in Hart, 2010, p. 3)—providing online communities for adult First Nation students and practitioners is culturally appropriate and situationally appropriate and useful for communities’ work towards self-determination and self-government.

Note

1 The Constitution Act, 1982 defines Aboriginal peoples in Canada as Indians, Inuit, and Métis (Aboriginal Affairs and Northern Development Canada, 2014).

References


*Open Praxis,* vol. 7 issue 1, January–March 2015, pp. 103–112


Open Praxis, vol. 7 issue 1, January–March 2015, pp. 103–112


Book review of The New Landscape of Mobile Learning: Redesigning Education in an App-Based World


Reviewed by: Tony Hetrick
Boise State University (USA)

Introduction

Mobile learning is a topic of great interest to researchers and practitioners alike. Even though mobile integration and the adoption of mobile tools is occurring, the realization of widespread mobile learning has not truly materialized in academia. One factor affecting the adoption of mobile learning is the lack of a formal definition. Without formally defining the term, educators struggle how to integrate mobile devices for effective learning since researchers have yet to develop a workable mobile learning framework or even a set of best practices. Miller and Doering think that a fundamental aspect to mobile learning is mobility, which is the ability to freely move about and collaborate in an authentic environment in which learners gain insight and construct knowledge.

To communicate the potential of mobile learning, the editors use the analogy of an iceberg. On the surface, only certain aspects of the educational process are visible. The editors explain that learning is a complex process which is built from pedagogical foundations that integrate social interactions with technology. It is through the lens of this foundational layer that the editors are challenging the reader to view mobile learning. The editors divided the book into four main sections authored by experts in various aspects of mobile learning. The sections are (a) The Emerging Role of Mobile Learning, (b) Mobile Learning Design Guidelines and Frameworks, (c) Mobile Learning Design and Development Narratives, and (d) Mobile Learning Integration, Research, and Evaluation. The editors added a final section in which they explore the future of mobile learning. The chapters in each section provide a note to address the three different audiences, which are a designer, a teacher, and a researcher.

Content

Section 1: The Emerging Role of Mobile Learning

The authors of this section explain that one of the challenges instructional designers face in using mobile devices is to find the appropriate use of the technology. Technology use can easily become an overpowered method of accomplishing simple tasks. Only through appropriate use will technology transform education. These authors focus on mobile applications as the emerging role of mobile learning in education, with a connectivist view. The focus is not on using mobile devices as a tool which educators use to deliver learning materials. Rather, mobile technologies can help the learner create meaning from the knowledge when learned through activities where the knowledge is connected, opposed to facts and procedures. In this context, the role of the mobile application is...
to augment learning and increase learning performance. The authors explain how application designers can use behaviorist principles to augment learning by providing rewards, instant feedback, and personalized learning. This section includes an outstanding chart on the relationship between the desired instructional focus and design principle. The chart connects the instructional focus to mobile application examples, to learning theories, and finally to instructional design principles.

**Section 2: Mobile Learning Design Guidelines and Frameworks**

While a typical mobile learning scenario consists of a replication of traditional learning systems, the authors of this section offer a practical look at mobile learning design guidelines and frameworks. Their guidelines apply to design considerations for mobile learning applications and mobile media used for learning. Like in the case of mobile learning theories, little has been written on mobile learning design. The authors explain the first step in designing mobile applications is to understand how they differ from the traditional methods and embrace the characteristics of mobile technology. Embedded within mobile usage is the need to have a mobile literacy, which is being able to effectively navigate mobile computing. Mobile literacy changes our very nature. Educators need to redefine learning within mobile learning environments as mobile technology renders things obsolete such as memorizing terms due to increased access.

**Section 3: Mobile Learning Design and Development Narratives**

Mobile learning systems have not been widely studied in peer-reviewed design-based research articles. This section contains lessons learned from designers as they created their own iPad applications. The first group of designers developed applications for children working with letters and numbers. For these applications, the designers focused on a design which joined aesthetics and pedagogy with an attentiveness to simplicity. They did not design their iPad applications for the transmission of knowledge, but for leading the learners to be innovators and creators. The next group of designers walked the readers through how they created an augmented reality mobile application using a specific design pattern. These authors explained how they developed the user interface using pencil and paper to help visualize they desired outcome. A third group of designers detailed their application design process, which is a circular eight-step process.

**Section 4: Mobile Learning Integration, Research, and Evaluation**

This section moves the reader a step closer in understanding the issues surrounding mobile learning, largely using the iPad. The authors explore how to integrate mobile applications and then they explain the challenges. They explain how one should not look at application integration through the lens of traditional educational tools, but through the context of social and personalized learning, as is the mode of learning represented by mobile applications. In addition, educators should evaluate mobile applications for accessibility. Once applications are integrated, the authors addressed advantages and disadvantages of mobile devices. Advantages include augmented reality, simulations, immediate feedback, and the ability to record and capture data. The primary disadvantages are academic honesty and distractions that include cheating, accessing the internet, playing video games, taking pictures or screenshots of exams, or using them as inappropriate communication devices.

**Conclusion**

The book is very practical as the editors did an outstanding job of providing information about integrating mobile devices into specific areas to assist or augment learning. While the book provided insight into the field of mobile learning, it leaves the reader with additional questions as to what
researchers mean by mobile learning. The editors tried to address these ambiguities and put forth solutions, but the book represents the fragmented problems of mobile learning as the book itself is fragmented. Researchers often explain mobile learning as a separate field of learning, but this does not fit the reality of how mobile learning is used. Instead, the actual use of mobile learning often represents mobile integration. Just because one takes notes on a tablet in class or uses a mobile application for learning, they are not necessarily engaging in mobile learning. Rather, they are using available technology to augment their learning. Another criticism of the book is that some of the authors took a biased, or perhaps a convenient approach to Apple’s devices, and one could get the idea that mobile learning is only for ‘i’ devices. Comments and related thoughts such as “iPads are the next chapter” (loc. 1473) or “ways of maximizing the iPod, iPhone, and iPad’s features in support of learning” (loc. 595) were too common. I appreciated the other authors who took a neutral or more inclusive approach to the type of device as one stated that “tablet computers like the iPad seem to be well-suited for educational purposes” (loc. 5278). This book greatly contributes to the field of mobile learning by providing a greater look at mobile learning through a connectivist view and provides various ways of using mobile devices to support learning.