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
Hemlata Chari, University of Mumbai, India
Gangappa Kuruba, University of Botswana, Botswana
Thomas P. Mackey, SUNY Empire State College, New York, United States
Alan Tait, The Open University, United Kingdom
Belinda Tynan, RMIT University, Melbourne, Australia
Joel Warrican, University of the West Indies, Barbados
Yang Zhijian, Open University of China (OUC), China

Publisher and contact information

ICDE—International Council for Open and Distance Education
Drammensveien 211
0281 Oslo, Norway

teditor@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 (2018)  
Inés Gil-Jaurena  

**Research articles**

Challenges Faced by Adult Learners in Online Distance Education: A Literature Review  
Mehmet Kara, Fatih Erdoğdu, Mehmet Kokoç, Kursat Cagiltay  

The Complexity of Transnational Distance Students: A Review of the Literature  
William H. Stewart  

Dropout Patterns and Cultural Context in Online Networked Learning Spaces  
Aras Bozkurt, Yavuz Akbulut  

Open Practices in Public Higher Education in Portugal: Faculty Perspectives  
Paula Cardoso, Lina Morgado, António Teixeira  

“I Find the Whole Enterprise Daunting”: Staff Understanding of Open Education Initiatives within a UK University  
Sinead Harold, Vivien Rolfe  

But What Do The Students Think: Results of the CUNY Cross-Campus Zero-Textbook Cost Student Survey  
Shawna Brandle, Stacy Katz, Anne Hays, Amy Beth, Cailean Cooney, Jacqueline DiSanto, Linda Miles, Abigail Morrison  

Self-Study with the Educational Technology *Tell Me More*: What EFL Learners do  
George Gyamfi, Panida Sukseemuang, Kornsak Tantiwich, Pítayatorn Kaewkong
This brief introduction in the first Open Praxis issue in 2019 reports on some information and data about the Open Praxis development in the period from January 2013 to December 2018, with a special focus on volume 10, published in 2018, similar to the brief reports published in past years (Gil-Jaurena, 2015, 2016, 2017, 2018). Table 1 includes different journal statistics, such as number of submissions, number of published papers; acceptance rates; number of authors and number of reviewers.

66 authors (excluding the editor) contributed to Open Praxis volume 10 with their research, innovative practice, special papers or book reviews, compiling a total of 32 published items. Considering the international scope of the journal, contributions are geographically and institutionally balanced, coming from 18 different countries. The 58 reviewers also reflect a gender, geographical and institutional balance, as shown in the list available in the Open Praxis website (http://openpraxis.org/index.php/OpenPraxis/pages/view/reviewer).

Table 1: Journal statistics per year

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Issues published</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Items published</td>
<td>38</td>
<td>35</td>
<td>33</td>
<td>34</td>
<td>38</td>
<td>36</td>
</tr>
<tr>
<td>Research papers</td>
<td>21</td>
<td>16</td>
<td>13</td>
<td>14</td>
<td>21</td>
<td>20</td>
</tr>
<tr>
<td>Innovative practice papers</td>
<td>2</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Special papers*</td>
<td>9</td>
<td>9</td>
<td>11</td>
<td>8</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Editorial</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Software or book reviews</td>
<td>2</td>
<td>-</td>
<td>2</td>
<td>6</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total submissions</strong></td>
<td>56</td>
<td>52</td>
<td>57</td>
<td>63</td>
<td>65</td>
<td>54</td>
</tr>
<tr>
<td>Rejected before peer-review</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>15 (+4 book reviews)</td>
<td>17 (+3 book reviews)</td>
<td>10 (+3 book reviews)</td>
</tr>
<tr>
<td>Peer reviewed</td>
<td>44</td>
<td>42</td>
<td>45</td>
<td>38</td>
<td>43</td>
<td>40</td>
</tr>
<tr>
<td>Accepted</td>
<td>32</td>
<td>31</td>
<td>27</td>
<td>24</td>
<td>32</td>
<td>27</td>
</tr>
<tr>
<td>Days to review</td>
<td>47</td>
<td>41</td>
<td>56</td>
<td>63</td>
<td>56</td>
<td>61</td>
</tr>
<tr>
<td>Days to publication</td>
<td>107</td>
<td>118</td>
<td>117</td>
<td>158</td>
<td>169</td>
<td>163</td>
</tr>
<tr>
<td><strong>Acceptance rate</strong></td>
<td><strong>60,70%</strong></td>
<td><strong>59,61%</strong></td>
<td><strong>50,88%</strong></td>
<td><strong>45,28%</strong></td>
<td><strong>53,33%</strong></td>
<td><strong>54%</strong></td>
</tr>
<tr>
<td>Number of authors</td>
<td>65</td>
<td>81</td>
<td>71</td>
<td>65</td>
<td>80</td>
<td>70</td>
</tr>
<tr>
<td>Average authors per paper</td>
<td>1,71</td>
<td>2,31</td>
<td>2,15</td>
<td>1,91</td>
<td>2,11</td>
<td>1,94</td>
</tr>
<tr>
<td>Number of reviewers</td>
<td>45</td>
<td>53</td>
<td>61</td>
<td>59</td>
<td>66</td>
<td>58</td>
</tr>
</tbody>
</table>

The Open Praxis website has received visits from all over the world (figure 1), being the following the top ten countries (in descending order): United States (38.81% of the users), United Kingdom (6.17%), India (5.28%), Canada (4.44%), Palestine (4.05%), Australia (2.67%), South Africa (2.13%), Philippines (2.09%), France (1.86%) and Indonesia (1.76%).

![Figure 1: Location of visitors to Open Praxis website (January 2018-January 2019)](source: Google Analytics)

About the scientific impact, citations to Open Praxis in academic publications (journals, conference proceedings, books, etc.) have progressively increased since the relaunching of the journal in 2013 (figure 2). The current Open Praxis h-index is 24 (source: Google Scholar, January 30th 2019).

![Figure 2: Citations to Open Praxis per year. 1991–2018](source: Google Scholar)

After this brief report, what follows is an introduction to the first Open Praxis issue in volume 11, which includes seven research papers.

The first two papers present literature review studies with regards to the profile of online and distance education learners.

In the first article (Challenges Faced by Adult Learners in Online Distance Education: A Literature Review), Mehmet Kara, Fatih Erdoğdu, Mehmet Kokoç and Kursat Cagiltay, from Turkey, review 36 papers and identify internal (management, learning and technical challenges), external (job and domestic challenges) and program-related (tutor and institutional) challenges that adults experience when they are learners in online distance mode. They explain both the literature review procedure...
and the findings in detail, and conclude with some guidelines for administrators and practitioners in order to confront those challenges.

In the second paper (The Complexity of Transnational Distance Students: A Review of the Literature) William H. Stewart, from Korea, focuses on a specific profile in distance education in our current global world: transnational students. Building upon this emerging category, he reviews 45 papers and presents the findings highlighting aspects such as the complexity of cross-border situations, the role of distance education in facilitating access, or socio-political and cultural circumstances that tend to be simplified and not considered in their full meaning and potential. The author invites to further explore and recognize the complexity of transnational distance education students, beyond national frames.

Also dealing with cultural aspects but from a different perspective, in the next paper (Dropout patterns and cultural context in online networked learning spaces) Aras Bozkurt and Yavuz Akbulut, from Turkey, root their study on labelling learners’ cultural context according to their nationality and studying its relation with dropout in a MOOC. Through social network analysis and visual representation of the position each learner holds in the network (central vs peripheral) and their interrelations, the study provides interesting information about dropout patterns and points out practical implications of the findings.

The next three papers present survey-based studies about faculty perceptions of open education—the first one at a country level and the second one at an institutional level—, and about students’ perceptions, respectively.

In the first survey-based study (Open Practices in Public Higher Education in Portugal: faculty perspectives), Paula Cardoso, Lina Morgado and António Teixeira have asked 348 University teachers about open educational resources (OER) and open access (OA), considering, in each case, knowledge, use, barriers and incentives. The results show the landscape in Portugal, where the authors state that there is work to do in the promotion of openness, starting from raising awareness and knowledge both about OER and OA.

The second study (“I find the whole enterprise daunting”: Staff understanding of Open Education initiatives within a UK university) by Sinead Harold and Vivien Rolfe, used a survey with 67 respondents (most of them faculty), and interviewed 4 lecturers in the University of the West of England. Similarly to the previous study in Portugal, the topics were OER and OA, and the dimensions they explored covered understanding, use/activity and attitude (positive or negative) towards open initiatives. The results show some unexpected correlations and highlight barriers that staff face when approaching open initiatives. The authors suggest directions for further research and for institutional actions and policies to support open education.

In the last survey-based study (But What Do The Students Think: Results of the CUNY Cross-Campus Zero-Textbook Cost Student Survey), with regards to OER, a group of teachers at various CUNY campuses, USA—Shawna Brandle, Stacy Katz, Anne Hays, Amy Beth, Cailean Cooney, Jacqueline DiSanto, Linda Miles and Abigail Morrison—present learners’ views about the ZTC courses. The study explores the access to the ZTC materials (moment, place, device, printed/online access), perceptions of benefits and drawbacks. As a first study about this experience, the results shown are positive and help to identify aspects for improvement in future ZTC courses.

Finally, George Gyamfi, Panida Sukseemuang, Kornsak Tantiwich and Pittayatorn Kaewkong, from Thailand, also focus on students’ views in their paper Self-study with the Educational Technology, Tell Me More: What EFL Learners do. They explore, using a survey and a group interview, how 350 undergraduate students used the Tell Me More computer-learning program autonomously. The findings show what the learners’ practices are, including multitasking and some inconsistent practices. The authors point out some implications and recommendations to take advantage of the program for improving English language skills.
We hope these contributions will invite to reflection 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
Challenges Faced by Adult Learners in Online Distance Education: A Literature Review

Mehmet Kara  
Amasya University (Turkey)  
m.kara@live.com

Fatih Erdoğan & Mehmet Kokoç  
Trabzon University, Trabzon (Turkey)  
fatiherdogdu67@gmail.com & kokoc@trabzon.edu.tr

Kursat Cagiltay  
Middle East Technical University (Turkey)  
kursat@metu.edu.tr

Abstract

Although online distance education provides adult learners with an opportunity for life-long learning, there are still factors challenging them to engage in educational processes. The purpose of this study is to explore the challenges faced by adult learners in online distance education through the analysis of the relevant literature. The articles (N=36) published in the key journals in the fields of open and distance education, instructional technology, and adult education were reviewed and analyzed through constant comparative analysis in the current study. The findings reveal that adult learners have challenges related to internal, external, and program-related factors indicating the interrelated nature of these challenges. The findings also show that the challenges experienced by adult learners vary depending on their age, gender, knowledge and skills as well as the context in which they study. The findings of this study, which has an exploratory nature, have several implications for distance education stakeholders such as administrators, instructors, instructional designers, and policy makers.

Keywords: online distance education, adult learners, challenges

Introduction

It is clearly known that distance education provides adult learners with the advantage of life-long learning due to its flexibility. Distance education is defined as the planned teaching and learning activities provided through the use of a communication channel within an institutional organization without any time and place limitations (Moore & Kearsley, 2011, p. 2). With the widespread adoption of the Internet and online tools as the communication medium, online distance education empowered the flexibility of educational opportunities. Considering the advantages of online distance education, adults compose the largest audience for online distance education (Ke & Xie, 2009; Lim, 2001) and consequently the limits of the diversity expand in online distance education practices. Specifically, they display significant differences from traditional students in terms of their academic, psychological, and life characteristics (Richardson & King, 1998). Besides, their engagement in education is more irregular and varied compared with the traditional ones (McGivney, 2004). This variation and irregularity is due to the fact that they mostly continue their education with their work and family responsibilities. With all these in mind, adult learners’ unique characteristics cause unique challenges for them, which affect the way they continue their education or participate in online distance educational processes.
Adult Learning

Adult learners have distinct characteristics in comparison to traditional students. Firstly, they are aware of why and what they need to learn (Knowles, 1996). It is also known that the adult learners, who have diverse educational background and goals, want to reflect their experiences on their educational process (Lindeman, 2015). They are different from other learners in terms of their responsibilities in their daily lives, which influence their educational experience (Cercone, 2008). For this reason, there is a need for an educational environment where adult learners are allowed to determine their own educational processes; to share their ideas comfortably; and to sustain their educational process alongside their private lives. Thus, online distance education environment offers appropriate opportunities through the flexibility it provides for adult learners, who are aware of their own learning responsibilities and are required to manage their own learning processes.

In spite of the increase in the number of adult learners and consequently in the diversity of the students in online distance education, the number of the studies related to them are fewer in the literature than those studies about traditional learners (Chu & Tsai, 2009; Ke, 2010; Remedios & Richardson, 2013). Adult learners can be classified as young and older adults depending on their ages. However, adult learner can be defined as the ones who continue their education by balancing their family and work and are generally older than 22 (Kahu, Stephens, Leach & Zepke, 2013) and these characteristics makes them quite different from traditional learners. Although these differences might provide adult learners with some advantages in educational processes, they might lead to various challenges as well. As a consequence, these point out the need to plan educational environments and processes in accordance with these learners’ characteristics.

Adult Learners in Online Distance Education

Considering the learner-centered nature of all instructional design models, it is a necessity to design and implement online distance education programs that meet the needs of diverse learners including adults. This requires a sound understanding of the link between adult learners’ characteristics and the appropriateness of the online environments for their online experiences.

Learners can manage learning processes wherever and whenever they desire through the online learning environments. Additionally, adult learners have an opportunity to engage in more interaction via the tools (e.g. discussion and chat) offered by online learning environments (Kim, Liu & Bonk, 2005). By this way, they can develop virtual teaming skills and control their own learning processes (Kim, Liu, & Bonk, 2005). Interaction is also considered as a key factor in online distance education and it is a good predictor of learning (Picciano, 2002). Online distance education also provides an opportunity for learners to engage in individualized instruction and thus learning processes can be planned in harmony with their characteristics (Means, Toyama, Murphy, Bakia & Jones, 2009). Furthermore, one of the most fundamental and crucial benefits of online distance education for adults is the opportunity for life-long learning.

In addition to the advantages of distance learning mentioned above, it is known that especially adult learners face particular challenges during their online education. Computer and Internet self-efficacy of adult learners play a significant role in online learning processes (Johnson, Morwane, Dada, Pretorius & Lotriet, 2018). The learners who have low perception of competency in these issues or the older adult learners might have challenges in this process and this might cause learner dropout (Appana, 2008). The problems related to learner support might also be experienced in
online distance education. It might be the case that adult learners do not have available support through the related resources and orientation programs as college students do. Therefore, they might feel isolated in their educational experience. The challenges they experienced in education might increase when they lack of adequate support from their families and workplaces. In addition, adults have multiple roles such as spouse, parent, colleague, and student, each of which means additional responsibilities and workload (Thompson & Porto, 2014). These challenges might affect their learning success as well as causing dropout in online distance education programs or courses (Park & Choi, 2009). Increasing dropout rates are considered as a crucial problem in distance adult education. One study by Choi and Kim (2018) examined meaningful factors affecting adult distance learners’ decisions to drop out. Their study found that some of the factors affected adult learners’ decisions to persist in or drop out of the online degree programs such as basic physical constraints from work, scholastic aptitude, family/personal issues, motivation for studying, academic integration, interaction, and motivation (Choi & Kim, 2018). In another major study, Lee, Choi and Kim (2013) found that academic locus of control and metacognitive self-regulation skills were the more important factors influencing the dropout of adult learners. Deschacht and Goeman (2015) emphasized that future studies should be focused on preventing the dropout of adult online learners. These studies showed that the external and internal challenges faced by adults increased the likelihood of adult learners’ dropout. Due to the high rates of dropout, particularly by adult learners as a result of the challenges they faced, student retention is now considered as a success factor in online distance education programs (De Paepe, Zhu & DePryck, 2018; Martinez, 2003). Thus, there is also an immense need to focus on these challenges in online distance education practices.

Former research has concentrated on what to do to improve quality and adult learners’ performance in online distance education (Johnson et al., 2018; Thompson & Porto, 2014). In the review of the literature, it is observed that the relevant studies focus on a single component of distance adult education. For this reason, it seems significant to create a framework and explore current landscape regarding the mentioned challenges for the future studies in adult distance education. Recent studies addressed that a holistic understanding of the problems and challenges faced by adults in online distance education plays a key role in building effective online learning experiences (Wang, 2011; De Paepe et al., 2018). Therefore, the purpose of this study is to investigate the challenges faced by adult learners in online distance education through the review of the related literature so as to create such a framework. Specifically, the current study strives to answer the research question: What are the identified challenges faced by adult learners at a distance in the literature?

Method

The present study used systematic literature review procedures. The research studies in the literature reporting the challenges faced by adults were systematically reviewed and analyzed. The followed procedure was presented in the following sections.

Inclusion and Exclusion Criteria

Several criteria were determined for the inclusion of the studies. The main inclusion criterion was that the reviewed studies had to be conducted in the contexts of online distance education programs
offering academic degrees. Therefore, the studies about corporate trainings and Massive Open Online Courses (MOOCs) were excluded from the study because only the studies reporting the findings from the online distance education programs offering academic degrees were aimed to be included. Based on this main criterion, other inclusion and exclusion criteria were identified to review. Considering the developments in online distance education, the studies published since 2000 were included in this study. As another basic inclusion criterion, only the empirical journal articles were included; that is, the book reviews, literature reviews, meta-analysis studies, editorials, and conference proceedings were excluded in the current study. Furthermore, merely the articles published in peer-reviewed journals were included.

In accordance with the aim of this study, the journal articles aiming to investigate the challenges of adult learners in online distance education were included. As another criterion, the participants of the studies needed to be adult learners in that the studies either stated the ages of the participants explicitly or the participants were adult learners at a distance. The participants of the studies were accepted as adults only if they met the adult learner definition by Kahu et al. (2013). Since the focus of the current study is on reviewing the studies exploring adult learners’ challenges, only the qualitative, mixed methods, or descriptive studies were included. Additionally, it is obvious in the literature that some challenges faced by adult learners cause dropouts in online distance education programs. For this reason, the journal articles aiming to investigate the reasons for dropout behavior of adult learners were also included in the present study.

**Data Collection and Analysis**

The data collection started with a comprehensive search on the electronic databases and the tables of contents of the key journals publishing distance education and adult learning articles. The e-databases on which the search was conducted are Web of Science, SAGE Journals Online, Educational Resources Information Center (ERIC), Wiley Online Library, ScienceDirect, SpringerLink, and Taylor & Francis Online Journals. The search was conducted by using the keywords: distance education, adult learning/learners, challenges, obstacles, dropout, persistence, and retention.

The tables of the contents of the 36 key journals in distance education, instructional technology, adult and lifelong education were specifically reviewed. The journal articles were reviewed in terms of their aims, methods, contexts, and results. Finally, 36 journal articles included in this study were identified. The list of the journal articles reviewed in the current study are presented in Table 1. The demographics of the participants in the reviewed articles are also presented in Table 2.

The data analysis was conducted in three phases: organization of the articles, reduction of the findings in the articles through coding, and illustration of the findings via tables and a figure. The articles were firstly organized in an article database created by the researchers and were analyzed by using Constant Comparative Analysis method as suggested by Glaser (1965). Constant comparative analysis was used to compare and contrast the challenges that are encountered by adult learners at a distance reported in the studies. The challenges reported in the articles were coded and then categorized based on their similarities and differences. The analysis results were reported by comparing and contrasting the concepts and integrating the studies. The themes were created by adapting Willging and Johnson’s (2009) category of dropout reasons. They were grouped as the internal challenges directly related to the adult learners’ characteristics, the external challenges affected by the study conditions, and institutional challenges stemming from the educational organization responsible for the delivery of the instruction.
### Table 1: Articles reviewed in this study

<table>
<thead>
<tr>
<th>Number</th>
<th>Author(s)</th>
<th>Year</th>
<th>Research Type</th>
<th>Research Context</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Calvin &amp; Freeburg</td>
<td>2010</td>
<td>Qualitative</td>
<td>Undergraduate</td>
</tr>
<tr>
<td>2</td>
<td>Doherty</td>
<td>2006</td>
<td>Quantitative</td>
<td>Undergraduate</td>
</tr>
<tr>
<td>3</td>
<td>Dumais, Rizzuto, Cleary &amp; Dowden</td>
<td>2013</td>
<td>Mixed Method</td>
<td>An online degree program</td>
</tr>
<tr>
<td>4</td>
<td>Dzakiria</td>
<td>2012</td>
<td>Qualitative</td>
<td>No information</td>
</tr>
<tr>
<td>5</td>
<td>Erickson &amp; Noonan</td>
<td>2010</td>
<td>Quantitative</td>
<td>Graduate</td>
</tr>
<tr>
<td>6</td>
<td>Furnborough</td>
<td>2012</td>
<td>Qualitative</td>
<td>A language Course</td>
</tr>
<tr>
<td>7</td>
<td>Grace &amp; Smith</td>
<td>2001</td>
<td>Qualitative</td>
<td>A vocational training course</td>
</tr>
<tr>
<td>8</td>
<td>Joo</td>
<td>2014</td>
<td>Qualitative</td>
<td>Undergraduate</td>
</tr>
<tr>
<td>9</td>
<td>Kahu, Stephens, Zepke &amp; Leach</td>
<td>2014</td>
<td>Qualitative</td>
<td>Undergraduate</td>
</tr>
<tr>
<td>10</td>
<td>Nor</td>
<td>2011</td>
<td>Mixed Method</td>
<td>Undergraduate</td>
</tr>
<tr>
<td>11</td>
<td>Östlund</td>
<td>2005</td>
<td>Mixed Method</td>
<td>Undergraduate</td>
</tr>
<tr>
<td>12</td>
<td>Park &amp; Choi</td>
<td>2009</td>
<td>Quantitative</td>
<td>High school, Undergraduate, and Graduate</td>
</tr>
<tr>
<td>13</td>
<td>Pierrakeas, Xeno, Panagiotakopoulos &amp; Vergidis</td>
<td>2004</td>
<td>Qualitative</td>
<td>Undergraduate and graduate</td>
</tr>
<tr>
<td>14</td>
<td>Rao &amp; Giuliani</td>
<td>2010</td>
<td>Mixed Method</td>
<td>Graduate</td>
</tr>
<tr>
<td>15</td>
<td>Selwyn</td>
<td>2011</td>
<td>Qualitative</td>
<td>Undergraduate and graduate</td>
</tr>
<tr>
<td>16</td>
<td>Tekinarslan</td>
<td>2004</td>
<td>Qualitative</td>
<td>Graduate</td>
</tr>
<tr>
<td>17</td>
<td>Venter</td>
<td>2003</td>
<td>Qualitative</td>
<td>Graduate</td>
</tr>
<tr>
<td>18</td>
<td>Vergidis &amp; Panagiotakopoulos</td>
<td>2002</td>
<td>Quantitative</td>
<td>Graduate</td>
</tr>
<tr>
<td>19</td>
<td>Willging &amp; Johnson</td>
<td>2004</td>
<td>Qualitative</td>
<td>Graduate</td>
</tr>
<tr>
<td>20</td>
<td>Xenos, Pierrakeas &amp; Pintelas</td>
<td>2002</td>
<td>Qualitative</td>
<td>Undergraduate</td>
</tr>
<tr>
<td>21</td>
<td>Yasmin</td>
<td>2013</td>
<td>Qualitative</td>
<td>Graduate</td>
</tr>
<tr>
<td>22</td>
<td>Zhang &amp; Krug</td>
<td>2012</td>
<td>Qualitative</td>
<td>Graduate</td>
</tr>
<tr>
<td>23</td>
<td>Zembylas</td>
<td>2008</td>
<td>Qualitative</td>
<td>An online course</td>
</tr>
<tr>
<td>24</td>
<td>De Paepe et al.</td>
<td>2018</td>
<td>Qualitative</td>
<td>Educators</td>
</tr>
<tr>
<td>25</td>
<td>Vanslambrouck, Zhu, Tondeur, Philipson &amp; Lombaerts</td>
<td>2016</td>
<td>Qualitative</td>
<td>Teacher Training Program</td>
</tr>
<tr>
<td>26</td>
<td>Gravani</td>
<td>2015</td>
<td>Qualitative</td>
<td>Higher Education System</td>
</tr>
<tr>
<td>27</td>
<td>Choi &amp; Kim</td>
<td>2018</td>
<td>Quantitative</td>
<td>Online Degree Program</td>
</tr>
<tr>
<td>28</td>
<td>Choi &amp; Park</td>
<td>2018</td>
<td>Quantitative</td>
<td>Online Degree Program</td>
</tr>
</tbody>
</table>

*Continued*
Table 1: Continued

<table>
<thead>
<tr>
<th>Number</th>
<th>Author(s)</th>
<th>Year</th>
<th>Research Type</th>
<th>Research Context</th>
</tr>
</thead>
<tbody>
<tr>
<td>29</td>
<td>Knestrick et al.</td>
<td>2016</td>
<td>Quantitative</td>
<td>Graduate</td>
</tr>
<tr>
<td>30</td>
<td>Iloh</td>
<td>2018</td>
<td>Qualitative</td>
<td>Graduate</td>
</tr>
<tr>
<td>31</td>
<td>Musita, Ogane &amp; Lugendo</td>
<td>2018</td>
<td>Qualitative</td>
<td>Graduate</td>
</tr>
<tr>
<td>32</td>
<td>Boateng</td>
<td>2015</td>
<td>Quantitative</td>
<td>Graduate</td>
</tr>
<tr>
<td>33</td>
<td>Chang &amp; Kang</td>
<td>2016</td>
<td>Quantitative</td>
<td>Graduate</td>
</tr>
<tr>
<td>34</td>
<td>Kim &amp; Park</td>
<td>2015</td>
<td>Quantitative</td>
<td>Graduate</td>
</tr>
<tr>
<td>35</td>
<td>Thistoll &amp; Yates</td>
<td>2016</td>
<td>Qualitative</td>
<td>Distance Vocational Education</td>
</tr>
<tr>
<td>36</td>
<td>McGee, Windes &amp; Torres</td>
<td>2017</td>
<td>Qualitative</td>
<td>Online Teaching Expert</td>
</tr>
</tbody>
</table>

Review Procedure

Following the identification of the research studies based on the relevant literature and inclusion criteria, the abstracts and findings sections of these studies were reviewed. The abstracts were firstly reviewed to find out an indicator or clue of a challenge causing problems or dropout for adults. When an indicator or clue was not found in the abstract, the findings section was reviewed. In the findings section, it was aimed to identify whether there were findings regarding the challenges and whether these findings were related with adults. Finally, the identified findings were coded.

Table 2: Participants in the articles reviewed in this study

<table>
<thead>
<tr>
<th>Number</th>
<th>Age (Mean or Range)</th>
<th>Female-Male (N)</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>36</td>
<td>174-336</td>
<td>USA</td>
</tr>
<tr>
<td>2</td>
<td>28</td>
<td>7103-3343</td>
<td>USA</td>
</tr>
<tr>
<td>3</td>
<td>29</td>
<td>Unavailable</td>
<td>USA</td>
</tr>
<tr>
<td>4</td>
<td>42-51</td>
<td>3-5</td>
<td>Malaysia</td>
</tr>
<tr>
<td>5</td>
<td>21-65</td>
<td>42-9</td>
<td>USA</td>
</tr>
<tr>
<td>6</td>
<td>Unavailable</td>
<td>28-15</td>
<td>UK</td>
</tr>
<tr>
<td>7</td>
<td>Unavailable</td>
<td>1-3</td>
<td>Australia</td>
</tr>
<tr>
<td>8</td>
<td>Unavailable</td>
<td>Unavailable</td>
<td>Korea</td>
</tr>
<tr>
<td>9</td>
<td>25-59</td>
<td>15-4</td>
<td>New Zealand</td>
</tr>
<tr>
<td>10</td>
<td>50-59</td>
<td>22-50</td>
<td>Malaysia</td>
</tr>
<tr>
<td>11</td>
<td>Unavailable</td>
<td>Unavailable</td>
<td>Sweden</td>
</tr>
<tr>
<td>12</td>
<td>20-Above 40</td>
<td>105-42</td>
<td>Korea</td>
</tr>
</tbody>
</table>

Continued
### Table 2: Continued

<table>
<thead>
<tr>
<th>Number</th>
<th>Age (Mean or Range)</th>
<th>Female-Male (N)</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>23-45</td>
<td>357-873</td>
<td>Greece</td>
</tr>
<tr>
<td>14</td>
<td>Unavailable</td>
<td>Unavailable</td>
<td>USA</td>
</tr>
<tr>
<td>15</td>
<td>21-71</td>
<td>30-30</td>
<td>Africa, Asia, Australia, Europe, USA</td>
</tr>
<tr>
<td>16</td>
<td>Unavailable</td>
<td>Unavailable</td>
<td>Turkey</td>
</tr>
<tr>
<td>17</td>
<td>Unavailable</td>
<td>24-19</td>
<td>Europe, Asia Pacific</td>
</tr>
<tr>
<td>18</td>
<td>23-39</td>
<td>643-577</td>
<td>Greece</td>
</tr>
<tr>
<td>19</td>
<td>Unavailable</td>
<td>39-16</td>
<td>USA</td>
</tr>
<tr>
<td>20</td>
<td>31</td>
<td>217-535</td>
<td>Greece</td>
</tr>
<tr>
<td>21</td>
<td>25-45</td>
<td>6390-5758</td>
<td>India</td>
</tr>
<tr>
<td>22</td>
<td>20-50</td>
<td>3-9</td>
<td>Canada, Japan, China, USA</td>
</tr>
<tr>
<td>23</td>
<td>27-50</td>
<td>17-5</td>
<td>Cyprus</td>
</tr>
<tr>
<td>24</td>
<td>Unavailable</td>
<td>Unavailable</td>
<td>Belgium</td>
</tr>
<tr>
<td>25</td>
<td>23-53</td>
<td>4-5</td>
<td>Belgium</td>
</tr>
<tr>
<td>26</td>
<td>25-55</td>
<td>10-6</td>
<td>Cyprus</td>
</tr>
<tr>
<td>27</td>
<td>30-49</td>
<td>1377-2085</td>
<td>Korea</td>
</tr>
<tr>
<td>28</td>
<td>30-49</td>
<td>761-512</td>
<td>Korea</td>
</tr>
<tr>
<td>29</td>
<td>33</td>
<td>780-67</td>
<td>USA</td>
</tr>
<tr>
<td>30</td>
<td>25-51</td>
<td>21-13</td>
<td>USA</td>
</tr>
<tr>
<td>31</td>
<td>18-35</td>
<td>8-8</td>
<td>Kenya</td>
</tr>
<tr>
<td>32</td>
<td>Unavailable</td>
<td>Unavailable</td>
<td>Ghana</td>
</tr>
<tr>
<td>33</td>
<td>20-60</td>
<td>Unavailable</td>
<td>USA</td>
</tr>
<tr>
<td>34</td>
<td>Unavailable</td>
<td>Unavailable</td>
<td>Korea</td>
</tr>
<tr>
<td>35</td>
<td>Unavailable</td>
<td>Unavailable</td>
<td>New Zealand</td>
</tr>
<tr>
<td>36</td>
<td>Unavailable</td>
<td>Unavailable</td>
<td>USA</td>
</tr>
</tbody>
</table>

For the internal validity of the study, the reviewed studies and the findings were checked by a subject field expert along with the researchers and the required revisions were made, consequently. As for the external validity, the qualitative findings were analyzed according to Willging and Johnson's (2009) category of dropout reasons of adults. As for the reliability, the data collection procedure, including the databases and keywords and data analysis, were clearly reported so that the study can be easily replicated. Figure 1 illustrates the phases of the analysis of a reviewed article and how the findings were coded.
Following the procedure demonstrated in Figure 1, 36 articles meeting the pre-determined inclusion criteria were identified and included in the current study. Diverse codes and themes were revealed through the detailed review of the abstracts and findings of these articles.

Findings and Discussion

The challenges experienced by adults were organized as themes depending on the properties of the challenges. The identified themes were internal, external, and program-related challenges.

Internal Challenges

The internal challenges include adult learners’ individual challenges related to their own characteristics. The internal challenges experienced by adult learners are classified as Management Challenges, Learning Challenges, and Technical Challenges as demonstrated in Table 3.

Open Praxis, vol. 11 issue 1, January–March 2019, pp. 5–22
The first sub-theme found in the literature is management challenges. In the literature there is a consensus on the fact that adult learners are different from traditional students since they have family and work responsibilities. For this reason, they need to manage their family and work while continuing their education. This requisite is reported in many of the studies in the literature as the source of a major challenge for adults; creating balance between work and family or other social responsibilities (Doherty, 2006; Selwyn, 2011; Yasmin, 2013). Particularly, female learners are reported as the ones who are mostly challenged by such family responsibilities as childcare and domestic works as well as their work if they are employed (Selwyn, 2011). Correspondingly, adult learners are required to have time management skills or appropriately structure or schedule their studies to create this balance (Calvin & Freeburg, 2010; Zhang & Krug, 2012). If they have insufficient or lack of time management skills, then this causes another challenge for them to continue their education or to successfully complete distance education program. The review regarding the internal challenges indicated that middle-aged adults (between the ages of 36 and 55) are unable to create a balance between their education and work, family, and social life. Additionally, female learners who were married and had children generally have challenge to establish balance between their family and education and they could not give adequate importance to their education, accordingly (Selwyn, 2011).

<table>
<thead>
<tr>
<th>Sub-Themes</th>
<th>Concepts</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management Challenges</td>
<td>Inability to create balance between education and work</td>
<td>14</td>
</tr>
<tr>
<td>Management Challenges</td>
<td>Inability to create balance between education and family or social life</td>
<td>14</td>
</tr>
<tr>
<td>Management Challenges</td>
<td>Difficulty in time management</td>
<td>6</td>
</tr>
<tr>
<td>Learning Challenges</td>
<td>Less commitment to education</td>
<td>6</td>
</tr>
<tr>
<td>Learning Challenges</td>
<td>Lack of interest in program or materials</td>
<td>2</td>
</tr>
<tr>
<td>Learning Challenges</td>
<td>Inability to understand course materials</td>
<td>1</td>
</tr>
<tr>
<td>Learning Challenges</td>
<td>Lack of prerequisite knowledge</td>
<td>3</td>
</tr>
<tr>
<td>Learning Challenges</td>
<td>Low concentration on study</td>
<td>1</td>
</tr>
<tr>
<td>Learning Challenges</td>
<td>Low self-confidence</td>
<td>1</td>
</tr>
<tr>
<td>Technical Challenges</td>
<td>Difficulty in communication through the internet</td>
<td>3</td>
</tr>
<tr>
<td>Technical Challenges</td>
<td>Insufficient computing skills</td>
<td>9</td>
</tr>
<tr>
<td>Technical Challenges</td>
<td>Difficulty in accessing reliable information</td>
<td>1</td>
</tr>
</tbody>
</table>

The second sub-theme is learning challenges. The aforementioned management challenges influence adults’ commitment to their education and less commitment to education poses one of the learning challenges for them as reported by Dumais et al. (2013). Yasmin (2013) found out that the adult learners who start to study after a long period of time have a difficulty focusing on studying. In addition to these personal challenges, some factors pertaining to distance education programs also pose learning challenges for adults when an inconsistency between the program and learners occurs. In their study, Willging and Johnson (2009) reported that lack of interest in a program or learning materials is a source of challenge for adults. Pierrakeas et al. (2004), on the other hand, indicated that learners’ inability to understand course materials and their lack of prerequisite knowledge or skills for a course might be also challenges for traditional learners. The review showed that middle-aged adults have challenges to concentrate on studying and course materials owing to their busy work life.
The final sub-theme is technical challenges especially experienced by older adults. The studies conducted with older adults reported that technology usage poses a challenge for them. For example, in his study with undergraduate students who are 50 and older, Nor (2011) reported that communication on the Internet is a challenge for adult learners. In another study with graduate adult learners who are between 50 and 65 by Erickson and Noonan (2010), it was reported that the lack of technical skills makes the instructional process challenging for learners. The same finding was also reported in the study with the students who are between 41 and 51, by Dzakiria (2012). He additionally revealed that accessing reliable information via the Internet is another challenge for adults. The review findings demonstrated that the older adults who are 50 and above unlike the young and middle-aged adults have difficulty to participate in the collaborative activities satisfactorily due to the insufficient technical skills and insufficient interaction on the internet (Nor, 2011; Dzakiria, 2012; Chang & Kang, 2016).

External Challenges

The external challenges include the challenges stemming from work and domestic environments or from responsibilities of adult learners as independent from their personal characteristics. The external challenges are categorized into two sub-themes as Job-related and Domestic challenges as shown in Table 4.

Employed adults have challenges concerning their jobs. Even if they have the ability to create the balance between work and education, they could not find the needed time to meet the course or program requirements when they were overloaded with their works as reported by Dumais et al. (2013). Likewise, Willging and Johnson (2009) revealed that varying job responsibilities are also a challenge for adult learners. They also reported that when the adults had jobs that did not have a pre-determined work schedule or had financial problems, there were high rates of dropout in the distance education programs. It was observed that this challenge was faced by the employed middle-aged adults who lived in the countries with high population (e.g. USA, China, India, and Canada), and thereby who had busy work schedule. In this regard, they needed support from the organizations where they worked to meet the educational requirements. Lack of organizational support was reported as either the main source of the challenges or as a factor that made it difficult for adults to deal with these challenges in several studies (Joo, 2014; Park & Choi, 2009; Willging & Johnson, 2009). Due to heavy workload, lack of organizational support, schedule conflicts or, sometimes, family responsibilities –especially for female learners–, adults tend to have limited time to allocate for their education (Erickson & Noonan, 2010; Kahu et al., 2014; Rao & Giuli, 2010; Venter, 2003; Willging & Johnson, 2009; Zembylas, 2008).

<table>
<thead>
<tr>
<th>Sub-Themes</th>
<th>Concepts</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job-Related Challenges</td>
<td>Work overload</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Lack of employing organization’s support</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Schedule conflicts</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Financial problems</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Limited time to study</td>
<td>6</td>
</tr>
<tr>
<td>Domestic Challenges</td>
<td>Technical problems</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Limited environment to study</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Lack of family support</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 4: External challenges faced by Adult Learners in Distance Education

Open Praxis, vol. 11 issue 1, January–March 2019, pp. 5–22
One of the domestic challenges is concerned with technical problems such as disconnection problems and lack of broadband Internet speed experienced by adults in their study locations (Dzakiria, 2012; Kahu et al., 2014; Ostlund, 2005; Rao & Giuli, 2010). For example, in their study with mature age learners, Kahu et al. (2014) reported that some of the learners had technical problems in participating in the educational activities at their home and they could not study in their workplaces. This challenge is partially a source of another challenge, which is limited physical environment to study (Kahu et al., 2014; Selvyn, 2011; Zembylas, 2008; Zhang & Krug, 2012). In his study with undergraduate and graduate adults, Selwyn (2011) indicated that the lack of suitable physical environment to study is particularly a challenge for females since they have multiple responsibilities aside from their education such as childcare, household works, and their job-related works if they are employed. In this respect, adults need to have family support for their education as well as organizational support. Otherwise, lack of family support becomes another domestic challenge (Willging & Johnson, 2009; Zembylas, 2008). In his study with graduate students, Zembylas (2008) reported that family support served to help adult learners to deal with many of the problems they encountered and to create a balance between their family responsibilities and education.

Program-related Challenges

In online distance education, the context of each program might be also a source of challenge itself for learners, which is called in this study as program-related challenges. These sorts of challenges include the ones pertained to the distance education program in which adults participate in educational activities. Within this theme, there were two sub-themes called ‘tutor-related’ and ‘institutional challenges’ as demonstrated in Table 5.

The literature indicates that adults suffer from insufficient interaction with both tutors and other students. Tutors clearly influence learners’ satisfaction and success in both distance education and traditional education settings. Tutors’ ineffective interaction with learners brings about several learning challenges (Dumais et al., 2013; Dzakiria, 2012; Joo, 2014; Ostlund, 2005; Venter, 2003). Tutors’ interaction problems with learners might arise when the tutors have limited communication with learners (Joo, 2014), or fail to provide them with any response (Dumais et al., 2013), or with timely response (Dzakiria, 2012). The lack of sufficient feedback (Östlund, 2005), the needed tutor assistance (Pierrakeas et al., 2004), and the lack of synchronous communication with tutors (Joo, 2014) are also among other interaction problems between the tutor and the learners.

Table 5: Program-related challenges faced by Adult Learners in Distance Education

<table>
<thead>
<tr>
<th>Sub-themes</th>
<th>Concepts</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tutor-related Challenges</td>
<td>Low interaction with tutors</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Low interaction with learners</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Feeling of isolation</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Unsuitable course requirements</td>
<td>6</td>
</tr>
<tr>
<td>Institutional Challenges</td>
<td>Unsuitable learning materials</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Too difficult or demanding program</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Lack of institutional support</td>
<td>9</td>
</tr>
</tbody>
</table>
Interaction among learners emerges as another interaction challenge. Studies show that interaction among adults or their engagement in the social learning groups is quite low (Furnborough, 2012; Östlund, 2005; Venter, 2003; Zhang & Krug, 2012). The reason for the insufficient interaction among the learners varied in different studies. For example, in Furnborough’s (2012) study, the adults stated that they could not interact with their peers because of their work and family responsibilities. The participants in Zhang and Krug’s (2012) study, on the other hand, showed that the reason for their lack of interaction was related to their belief that establishing a social relationship was difficult at a distance.

In some studies, feeling of isolation is reported as a challenge faced by adults. The sources of this feeling might include a single or multiple reasons. For example, in the study conducted with graduate adults, Zembylas (2008) revealed that the lack or insufficiency of communication between the learners and the instructors and among learners tended to act as a source of isolation on part of the learners. In another study with graduate students, Venter (2003) listed the sources of isolation as “inadequate structure, discipline, and guidance by tutors”, “inadequate interaction with tutors and among learners”, “lack of feeling of belonging to institution or being a student”, and “lack of time due to work and family responsibilities”.

The final tutor-related challenge is found to be unsuitable course requirements. These sorts of challenges include too difficult assignments (Rao & Giuli, 2010; Willging & Johnson, 2009), lack of clarity in assignments (Dumais et al., 2013), and too difficult or demanding courses or programs (Willging & Johnson, 2009; Xenos et al., 2002). These challenges might stem from either institutional challenges (Dumais et al., 2013; Willging & Johnson, 2009) or internal challenges such as the incongruences between the course materials and learners’ preferences, learners’ lack of prerequisite knowledge about courses and programs (Grace & Smith, 2001; Pierrakeas et al., 2004) or their lack of interest in the course materials (Willging & Johnson, 2009).

The institutional challenges, on the other hand, are unsuitable learning materials, too difficult or demanding programs, and the lack or inefficiency of technological and pedagogical support in distance education institutions. Firstly, the learning materials provided by distance education institutions might not fit learners’ expectations depending on the various reasons and this situation might cause learning challenges. According to the related literature, the learning materials provided by distance education institutions are unsuitable since they do not meet learners’ learning preferences (Grace & Smith, 2001). It is also often the case that the learners have a lack of interest in the materials (Willging & Johnson, 2004) or they are unable to understand them (Pierrakeas et al., 2004). Additionally, the materials might have heavy academic language or be unsuited to learners’ worldview and experiences (Joo, 2014). As a common finding, the adult learners experiencing these challenges are generally employed females, who continue their education by dealing with housework and childcare and thus having a great deal of responsibility in both family and work life.

The second challenge is presented as unsuitable course requirements under the tutor-related challenges theme above. Program difficulty or difficulty of the courses in general are also reported as a challenge that brings about dropouts in distance education programs (Xenos et al., 2002; Willging & Johnson, 2009). For this reason, the study conducted by Dumais et al., (2013) implies that it is crucial to take learners’ generational status into consideration during the development of distance education programs as well as services.

The final challenge is found as the lack of technological and pedagogical support. Studies indicate that adults need both technological (Erickson & Noonan, 2010; Wilging & Johnson,
2009) and pedagogical support for learning materials (Dumais et al., 2013). Since some studies show that some learners, especially older adults have a challenge in using technology (Dzakiria, 2012; Nor, 2011), it appears that these learners need technological support from their distance education institutions. For example, in their study with graduate adult learners who are between 50 and 65, Erickson and Noonan (2010) revealed that adults needed a higher level of technological support to be successful in distance education courses. Additionally, Park and Choi (2009) reported that organizational support was one of the predictive factors of dropout in distance education courses.

Conclusion

The results of the study revealed three main categories, which comprise internal, external, and program-related challenges. These challenges are found to be generally interrelated. Additionally, the review yielded a classification of the challenges faced by adult learners in online distance education (see Figure 2). It was also demonstrated that the challenges perceived by adults depend on individual characteristics such as age, gender, knowledge, skills, and the context.

The theme of internal challenges presents those challenges that are caused by the learners’ individual characteristics or by their lack of some required skills to cope with these challenges. They are classified as management, learning, and technical challenges. It arises from the review that the internal challenges are closely related with the external challenges, which stem from their job and domestic conditions. The job-related challenges include work overload, lack of organizational support, schedule conflicts, financial problems, and limited time to study. Domestic challenges, on the other hand, consist of technical problems, limited environment to study, and lack of family support. In addition, program-related challenges are categorized as tutor-related and institutional challenges. Tutor-related challenges comprise low interaction with tutors, low interaction among learners, feeling of isolation, and unsuitable course requirements. Institutional challenges are shown to be constituted by unsuitable learning materials, too difficult or demanding program, and lack of institutional support. These challenges tend to be strongly related with each other and one challenge might become the source of another as independent from their classifications in this study.

The study has several practical implications for distance education administrators, practitioners, and policy makers as well as theoretical implications for the researchers. First of all, each challenge faced by the adults might be individual and contextual. For this reason, the distance education administrators are required to get student feedback in terms of the effectiveness of their distance learning experience in addition to learning about students’ entry characteristics.
The findings related to the internal challenges demonstrate that adult learners’ participation and their persistence in distance education courses and programs can be increased with the provision of some guidance. This guidance can be focused on effective time management and learning strategies as well as how to handle frequently faced technical problems. It can be in the form of orientation programs, student guides, and ongoing guidance and support. It can be argued that administrators have little chances of overcoming the external challenges. However, these challenges can be overcome by providing flexible course and program requirements in addition to developing contextual solutions for each challenge relying on the characteristics of the learners. Student orientation and mentoring can also be useful in overcoming the identified external challenges. Distance education administrators especially can cope with the institutional challenges faced by the adult learners. For the tutor-related challenges, continuing faculty professional development and performance improvement are essential. An accreditation policy can be adopted for faculty before their recruitment in online distance programs. The study findings particularly underline the importance of faculty’s andragogical and pedagogical competencies in addition to their technological literacy. This can be done through such faculty professional development strategies as student feedback, communities of practice, ongoing support, electronic performance support systems, and so on.

The principal theoretical implication of the study is that instructional technologists and practitioners should focus on personal traits of adult online learners and contextual factors instead of one-size-fits-all approach in adult learning design. There is, therefore, a definite need for employing dynamic assessment tools and learning analytics dashboards which can improve learning and optimize online distance learning environments for adults. This might serve to play a key role in both building effective online learning experiences of adult learners and overcoming learning and program-related challenges. In addition, the findings of the study provide insights for the challenges that prevent the adults from engaging in distance education programs. Thus, educational practitioners should
make reasonable effort to create flexible learning environments and course content considering the individual differences and challenges of adult learners. It is considered that a detailed examination of these challenges might have a positive influence on adult learners’ dropout decisions.

Limitations and Recommendations for Future Research

The present study has several limitations, which point at a need for future studies. The study was limited to the articles published after 2000. Future research can also draw a more comprehensive picture of the challenges faced by adult learners in distance education programs with the inclusion of more e-databases or educational journals in the search process. Furthermore, the thesis and dissertations on this issue can also be incorporated into the study to provide an understanding of the adult challenges in local or national contexts. Each of the identified challenges implies a call for the intervention studies. Therefore, in further studies, interventions can be designed and implemented to overcome the currently identified challenges.

References


Grace, L. J. & Smith, P. J. (2001). Flexible delivery in the Australian vocational education and training sector: Barriers to success identified in case studies of four adult learners. *Distance education, 22*(2), 196–211. [https://doi.org/10.1080/0158791010220202](https://doi.org/10.1080/0158791010220202)


The Complexity of Transnational Distance Students: A Review of the Literature

William H. Stewart
Gangnam-University of California Riverside (Republic of Korea)
stewartwilliamh@gmail.com

Abstract

Transnational education is a rapidly evolving and constantly changing field. The Internet has enabled virtually global access to distance education opportunities, however transnational distance students in particular have often been misclassified, oversimplified, or overlooked in prior research. This literature review synthesizes research and publications over a ten-year period focusing on the emerging phenomenon of transnational distance students. Contrary to the allure of flexible, any time, any place learning often ascribed to distance education, diverse and complex situations are highlighted that paint a more nuanced picture of student circumstances and motivations, counterintuitive and underrepresented conditions that may influence students in their decisions to enrol in transnational distance education programs.

Keywords: transnational distance students, transnational education, borderless higher education, globalization, literature review

Introduction

Today, the phenomenon of distance education continues to be shaped by broad forces such as globalization, industrialization, and socioeconomic change (Haughey, Evans, & Murphy, 2008). Within this shifting landscape is the emergence of newer categories of distance students due to these complex circumstances. Though distance education has traditionally provided alternative pathways to education for underserved populations (Casey, 2008; Lee, 2017; Moore & Kearsley, 2012; Saba, 2011; Simonson, Smaldino, Albright, & Zvacek, 2012; Sun & Chen, 2016), this additional complexity can be seen in the rise of transnational distance students (see Gemmell & Harrison, 2017; Stewart, 2017; Wilkins, 2016). Moreover, while various technological innovations (e.g., print media, radio/satellite broadcasting, computer networking) have enabled distance education over the last 200+ years (Casey, 2008; Moore & Kearsley, 2012; Saba, 2011; Simonson et al., 2012), the Internet-era of distance education can arguably be characterized as enabling global, borderless education, or transnational distance education. This change is further evidenced by more nuance in the resulting student body, and is the subject of this review.

Methodology

Research Objectives

Given the complex nexus of distance students in a world where educational borders have greatly diminished in light of the Internet, this review was undertaken to explore what is currently known in the literature about distance students who are situated outside of a conventional/national frame of reference (i.e., transnational distance students). While there is much literature that clearly explores the domestic experience of distance students, as well as the experience of international students in national programs, there is a poverty of recognition of the transnational distance student
Therefore, the purpose of this literature review is relatively humble, intending to bring attention to the specific circumstances surrounding such students.

Research Design

The research methodology for this study was to review published scholarship regarding transnational distance students which included studies over a 10 year period from 2008 to 2018. For purposes of this review, transnational distance students were defined using Stewart’s (2017) definitions of the expatriate or transnational distance student (see Figure 1). These categories are distinguished using three criteria: national origin, local sojourn status, and geographic location.

<table>
<thead>
<tr>
<th>National</th>
<th>International</th>
</tr>
</thead>
<tbody>
<tr>
<td>A national/citizen of country A, attending university online in country A, while living in country A. Designated as a regular student by the University.</td>
<td>A national/citizen of country A, attending university online in country B, while living in country A. Designated as an international student by the University</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transnational</th>
<th>Expatriate</th>
</tr>
</thead>
<tbody>
<tr>
<td>A national/citizen of country A, sojourning via a non-tourist visa in country B, attending university online in country C. Designated as an international student by the University.</td>
<td>A national/citizen of country A, sojourning via a non-tourist visa in country B, attending university online in country A. Designated as a regular student by the university.</td>
</tr>
</tbody>
</table>

Figure 1: Stewart’s Model of Distance Students

Selection Criteria, Sources of Data, and Data Analysis

The search was conducted in English and limited to English-language texts. Peer-reviewed journal articles from topic-related journals (e.g., Studies in Higher Education, The Quarterly Review of Distance Education, Journal of Studies in International Education), books, and full texts were the primary sources used in this review. Studies conducted in various countries were used to paint a broad picture, though the educational programs and students represented in this review are largely from the North American, European, Middle Eastern, and Asian regions.

Key words used for the search were distance students, transnational distance students, transnational students, distance education, transnational education, transnational higher education, and borderless education. Data was collected from online databases including ERIC, EBSCO, Google Scholar, and Academic Search Premier. Based on the selection criteria, approximately 60 relevant works were initially identified. The excluded material typically did not address students (e.g., partnership models, growth strategies, evaluation methods) and/or fell outside of the imposed time frame from 2008 onwards. 45 works were then used to identify relevant and recurring themes about transnational distance students. Abstracts with similar themes were placed together to organize emerging trends.
After text review and synthesis, more specific themes were identified and used to subsequently structure and organize the corresponding sections presented in this paper.

**Findings from the Review**

**Location Unbound**

Distance education is an increasingly common experience in society today (Allen, Seaman, Poulin, & Straut, 2016; Dunlap & Lowenthal, 2018; Lee, 2017; Means, Bakia, & Murphy, 2014; Ortagus, 2017; Watts, 2016). Allen et al. (2016) noted that 28% of college students in the United States alone take online courses each year. Elsewhere in the world there are Open Universities serving tens of thousands of students annually, in addition to regular brick and mortar universities offering their own catalogues of distance programs (Moore & Kearsley, 2012; Simonson et al., 2012). With so many students participating in distance/online education, it is not surprising to find numerous quantitative, qualitative, mixed-methods studies, books, analyses, and literature reviews (e.g., Allen et al., 2016; Aragon & Johnson, 2008; Colorado & Eberle, 2010; Dabbagh, 2007; Dumais, Rizzuto, Cleary, & Dowden, 2013; Hachey, Wladis, & Conway, 2012; Hachey, Wladis, & Conway, 2013; Hughes, 2013; Kauffman, 2015; Kaupp, 2012; Liu, Gomez & Yen, 2009; Lee, 2011; Lorenzo, 2015; Means, Bakia & Murphy, 2014; Roblyer & Davis, 2008; Stoessel, Ihme, Barbarino, Fisseler & Stürmer, 2015; Xu & Jaggars, 2013; Yoo & Huang, 2013). However these are typically limited to a single frame of reference for practical reasons, and overlooks the complexities of transnational distance students operating in multiple reference frames.

The Internet has unbound the individual from any particular geographic location, and in light of globalization and the movement of people, distance education opportunities, instructors, students, and institutions are not necessarily confined to national borders (Garret, 2003; Gemmell & Harrison, 2017; Stewart, 2017; Wilkins, 2016). There are numerous reasons, both historically and currently, that are responsible for population movement such as government/military postings, missionary work, overseas corporate assignments, international education, self-initiated expatriation, or marriage. Moreover, there are less benign reasons such as civil wars, natural disasters, or social, economic, and political crises (Dobos, 2011; Froese, 2012; Pollock & Van Reken, 2009). Students can also choose not to relocate for the sake of attending a given program (Hewling, 2005; Gunawardena, 2003). The intersection of these circumstances is evidenced by the formation of transnational cultures that are not endemic to any one particular place (Gunawardena, 2003; Gunawardena, 2014; Gunawardena & LaPointe, 2008).

Although academic institutions have long made distinctions between national and international students for various practical, logistical, and legal purposes, this is still a work-in-progress in the realm of transnational distance education since students can cross borders electronically (Andrews & Tynan, 2010; Dobos, 2011; Gemmell & Harrison, 2017; Stewart, 2017; Wilkins, 2016). Although a uniform consensus does not exist in regards to transnational policy and adult education (Knight, 2016; Milana, 2012; Wilkins, 2016), transnational education delivery models provide some insight into how borders are crossed. Transnational movement can be quite complicated when it overlaps/merges with the diverse practices of distance education. Like distance education (and online education in particular), there are numerous differences with nationally-based education programs that are unique and separate from traditional education (GATE, 1997). By simply looking at the concept of borderless higher education, Garrett (2003) wrote that this “refers to the crossing various
kinds of ‘borders’ - geographical, sectoral and conceptual” (p. 113). McBurnie and Ziguras (2001) noted that a hallmark of transnational education is when “learners are located in a country different from the one where the awarding institution is based” (p. 86). Adding to the difficulty discussing transnational education is the lack of consistency between terms, definitions, and usage depending on the educational service provider or the students in attendance (Caruana & Montgomery, 2015; Knight, 2016; Wilkins, 2016).

Paradigm Shift: International to Transnational

Francois (2016) provided additional definitions from the Asia-Pacific European Cooperation (APEC) describing a situation “in which the learners are located in a country different from the one where the awarding institution is based” (p. 3), while UNESCO and the OECD described it as one where “the teachers, student, programme, institution/provider or course materials cross the national jurisdictional border” (p. 4), as well as the British Council where “students study towards a foreign qualification without leaving their home country” (p. 4). By extension, it is easy to see how distance education can also fall into the realm of transnational education as any given education program, its resources, students, and faculty can all cross borders electronically.

Like the variety of formats of online courses in distance education (see Lowenthal, Wilson & Parrish, 2009), transnational education also encompasses a wide variety of concepts and modes of operation. Knight (2016) argued that despite the variability in terms and definitions at present, an overlooked but key factor is “whether the TNE program involves collaboration between a foreign and local provider” versus “situations where only facilities are provided by a host country HEI or organization” (p. 38). The same advice that Lowenthal et al. (2009) offered about the oversimplification of how online courses are talked about is equally valuable and warranted in the transnational context as well. The focus on delivery modes or program characteristics, however, does not address the complexity in student demographics that is the result of transnational education, and described in other scholarship to varying degrees (see Andrews & Tynan, 2010; Dobos, 2011; Gemmell & Harrison, 2017; Stewart, 2017; Wilkins, 2016).

Wilkins (2016) provided elegant descriptions of transnational distance students with the examples of Smita, from India but living in Dubai, where she studies at the international branch campus of a British university, or Olawale, who while living in Nigeria, is taking a MOOC offered from Harvard University in the United States. The key features of these examples are: a) student nationality, b) national origin of the educational provider, and c) actual geographic location of both. In transnational education, at least two of the three characteristics differ. Stewart (2017) described this complexity in a simple descriptive study in Korea by virtue of sojourn status (i.e., visa classification of non-citizen residents) while Gemmell and Harrison (2017) addressed student categorization through tuition fee classification in the United Kingdom due to complexities of EU membership.

Since distance education requires a mediating technology, it comes as no surprise that Francois (2016) classified all methods of distance education, from correspondence, broadcast, and online courses, as transnational education modes (see Table 1). However, the Internet has acted as a catalyst and enabler of transnational distance education in ways and scales that are fundamentally different (Andrews & Tynan, 2010). International distance student enrollment in the United States (see Allen et al., 2016), international, transnational, and “home” distance student enrollment in the United Kingdom (see Gemmell & Harrison, 2017), the phenomenon of expatriate and transnational distance students in Korea (see Stewart, 2017), or even national MOOC platforms with a disproportionately globally distributed student body (see Glass, Shiokawa-Baklan & Saltarelli, 2016) illustrate this effect. What Francois (2016) pragmatically highlighted, however, is that in transnational education, distance education is a part of the family.
Despite distance education’s inclusion in the overall body of transnational education modes, distance student voice is not adequately represented in its scholarship (Andrews & Tynan, 2010; Wilkins, 2016). By contrast, there is more work describing modes of delivery (e.g., Caruana & Montgomery, 2015; Francois, 2016; Knight, 2016; Wilkins & Huisman, 2012) and faculty experiences (e.g., Wilkins, Butt & Annabi, 2017; Ziguras & Pham, 2014). There are also investigations into the “international” student experience which may or may not fall into a transnational space given the conventional use of the term (see Erichsen & Bolliger, 2010; Habib, Johannesen, & Øgrim, 2014; Gemmell, Harrison, 2016).
Clegg & Reed, 2013; Selinger, 2004; Selwyn, 2011a; Selwyn, 2011b; Wilkins & Balakrishnan, 2013). This single homogenous label, however, oversimplifies potential nuance in a transnational population (Andrews & Tynan, 2010; Gemmell & Harrison, 2017; Stewart, 2017; Wilkins, 2016). This subtlety can be more tangible and better understood by looking at some examples of transnational education as they exist in the real world.

**Real World Examples**

The variety of formats (as largely outlined by Francois, 2016) in transnational education are not hypothetical or uncommon, however. There are numerous programs currently running, as well as numerous research studies conducted in various programs around the world. Hou et al. (2014) identified 511 transnational programs in China alone at both undergraduate and graduate levels. The literature also indicates many transnational programs operating in Malaysia (see Arunasalam, 2016; Dobos, 2011; Sidhu & Christie, 2013; Wilkins et al., 2017), the Middle East (see Miller-Idriss & Hanauer, 2011; Wilkins et al., 2017), Vietnam (see Ziguras & Pham, 2014), Taiwan (see Yung-chi Hou, Morse & Wang, 2015), Indonesia (see Sutrisno & Pillay, 2013), Pakistan (see Kanu, 2005), Korea (see FSU, n.d.; IFEZ, n.d.; IGC, n.d., UCRX, n.d.) and Singapore (see Dobos, 2011) to list a few. Several programs located in Korea and known to this author are illustrated below.

One example from Framingham State University’s Louis C. Cedrone Center is a program that offers education degree programs to educators living and working overseas (FSU, n.d.). Depending on the host country, faculty may fly in and exclusively teach all of the courses with the option to take some courses online, whereas in other countries, there may be partnerships in place with local universities where local faculty teach some of the program’s courses in a blended transnational, hybrid online class mode. Another American example is the University of California Riverside Extension Center (UCRX) which operated an offshore branch campus in Seoul, Korea from 2001-2018 (UCRX, n.d.). It offered several of UCRX’s programs, granting UC credit, in addition to providing pathways to degree programs at UCR (UCRX, n.d.). Similar to this offshore branch campus, is the Incheon Global Campus that was built in partnership with the national and a local municipal government to serve as a regional educational hub (IGC, n.d.). It was built to house 10 international branch campuses, though as of 2018, there were a total five universities in residence (4 American [Stony Brook, FIT, University of Utah, George Mason], 1 Belgian [Ghent]) (IGC, n.d.). The programs offered are the same as the ones run at their home campuses, are conducted in English, and require one-year to be spent at the respective home campus (IGC, n.d.).

While the variety of delivery modes may seem overwhelming with seemingly trivial differences, these features underscore the complexity in partnership agreements, local/foreign accreditation standards, and government regulatory compliance. Moreover, it underscores the variety of possible educational situations around the world. In an effort to meet student needs/increase educational access, these delivery modes represent a number of creative responses.

**Diverse Global Circumstances**

Distance education is often advertised as a practical solution providing flexibility and the ability to learn any time, any place. Hewling (2005) also noted that at the very least on “a broader level, diversely located students spread nationally, or internationally, may be able to attend programs previously only accessible to students willing and able to accept the disruption of physical relocation” (p. 337), but this oversimplifies the complex circumstances that are anything but uniform in a global setting.
There are more contextually pertinent difficulties (e.g., discrimination, political unrest) beyond just the benign idea of anywhere, anytime learning, and makes this assumption a limiting or cliché one (Pyvis, 2011). Selwyn (2011a) cautioned that there is a “need for educators, educationalists and policymakers alike to remain mindful of the limitations of globalised distance education in the twenty-first century” (p. 381); there are also limits to that distance education alone cannot overcome such as the digital divide (Gunawardena & LaPointe, 2008). Nevertheless, there are numerous instances where distance education provides a distinct benefit.

**Socio Political Circumstances.** Selwyn (2011a) noted that on the simpler end of a spectrum, students sought transnational distance education opportunities due to a lack of local opportunities; for example a Caribbean law program often could not run because of low enrollment. He also highlighted more complex cases where Serbians, living in Bosnia, faced difficulties attending Bosnian institutions due to ethnic discrimination, or the preference/privilege granted to ethnic Malay students applying to university over non-Malay minority groups in Malaysia. Even in the United States, certain students of religious/theological studies sought courses related to theological matters that were not viewed as having “undesirable religious agendas in their curricula” (Selwyn, 2011a, p. 374).

He also brought attention to the circumstances of the nomadic professional by highlighting an interview with a student who stated:

> I actually live all throughout the year in three different places between Gabon, Liberia and Greece… At one point I had planned on going back to the States and pursuing a master’s or even a PhD but then I met my husband [in Liberia] and life continued here and realised I was not going to obtain that goal. (p. 373)

A core feature of this nomadic, transnational life compared to the greater majority is that of its “irregular circumstances” (p. 373), although with the increasing scope of globalization and ICT, these circumstances may not be so irregular anymore. These can also be seen with the rise of the so called digital nomad who by virtue of ICT based work, is potentially able to work from anywhere in the world. As pointed out earlier by Gunawardena and LaPointe (2008), we are moving towards being a global or planetary community that is “evidenced by transnational cultures that are not wholly based in any single place” (p. 52). The student bodies that form as a result of geographically fluid relationships elucidate the fact that “with the development of modern transportation and advanced communication technologies, migration has shifted from *international* to *transnational*” where fixed, one-way, and permanent paths have become ones that are dynamic and recursive (Guo, 2015, p. 7). Nevertheless, even without such benign or negative circumstances affecting student motivation to pursue distance education opportunities “abroad”, differences in geographic origin may also indicate other relevant factors that make the process difficult.

To put it simply, the motivations and circumstances that lead students to transnational distance education are complex. As has been discussed in the literature, one of the primary purposes of distance education has been to increase access. The scope and scale of that access have been amplified by each successive wave of technological innovation, the most significant of which (to date) is the Internet. This has made transnational distance education possible in numerous intercultural and cross-cultural combinations and environments; and these environments require significant care (Gunawardena, 2003; Gunawardena, 2014; Gunawardena & LaPointe, 2008; Pyvis, 2011).
Cultural Considerations. Since the Internet has acted as a catalyst of transnational distance education, the inclusion/addition of students from diverse backgrounds has prompted additional cultural challenges. While distance learning can transcend national borders, the subsequent differences in values, expectations, social, and cultural contexts are arguably greater challenges than technological ones will ever be (Gunawardena, 2014). The inability to learn and/or understand the needs of prospective students will continue to challenge instructors and universities unless additional considerations are made (Gunawardena, 2003; Gunawardena, 2014; Gunawardena & LaPointe, 2008). This point is particularly important in education that is increasingly globally offered and participated in as it affects not only classroom dynamics but the designs of digital learning spaces, curricular content, and pedagogical approaches (Germain-Rutherford & Kerr, 2008; Gunawardena, 2003; Gunawardena, 2014; Gunawardena & LaPointe, 2008; Gemmell & Harrison, 2017; Hewling, 2005; Pollock & Van Reken, 2009). And although globalization is a deceptively simple term encompassing a broad range of concepts, it is this interconnected and interdependent network of relationships that more directly affect the transnational classroom (Gunawardena, 2014). While a diverse set of external circumstances may influence a student’s decision to take online courses that are not obvious to others in the digital space, they bring with them unique, complex, and inseparable internal cultural identities that are more readily experienced by peers (Germain-Rutherford & Kerr, 2008; Gunawardena, 2003; Gunawardena, 2014; Gunawardena & LaPointe, 2008; Hewling, 2005; Smith & Ayers, 2006; Pollock & Van Reken, 2009).

Even when students share the same national background, this does not necessarily mean they share the same cultural understandings as their peers (Gunawardena, 2014; Hewling, 2005; Pollock & Van Reken, 2009; Stewart, 2017). Or, despite the relatively similarity of one’s own culture to a “foreign” one, adaptation, distress, or shock may be more a function of the individual than any particular degree of difference between cultures (Jun & Gentry, 2005). Consider how any:

individual may choose to identify in general with the cultural norms of a nation, but this is by no means the only way in which individuals may locate an idea of culture for themselves. Furthermore, an increase in cross-border movement of people around the world means that many individuals are operating within at least two nation-based frames of cultural reference. (Hewling, 2005, p. 339)

Many of the studies on culture in the academic literature are not without limitations in this regard (see Gunawardena, 2014; Hewling, 2005). Studies are often broad in scope taking a national level view of behavior, oversimplifying culturally diverse nations/regions and as a result, gloss over subcultures/polycultural identities (Gunawardena, 2003; Gunawardena, 2014; Hewling, 2005; Jayatilleke & Gunawardena, 2016). Furthermore, certain expected behaviors such as power distance may prove to be the opposite online since the Internet can act as a socially neutral space due to the absence of physical or visible social markers (Gunawardena, 2003).

Gunawardena (2014) specifically argued that transnational education in particular needs a better model of culture that includes the Internet in its definition since the negotiation of culture also takes place online. This need is highly relevant to the digital space and the implementation of more deliberately cross-cultural instructional designs (Germain-Rutherford & Kerr, 2008). She adopted the term “idioculture” which encompasses the blurred lines between physical and virtual reality, is one that is a locally forming system, and one that “includes multiple cultural selves and hybrid identities on the Internet that interact with each other cross-culturally to form unique cultures of their own” (Gunawardena, 2014, p. 84). Another model meant to address the complexities of multiple cultural selves and their fluid nature was developed by Pollock and Van Reken and simply termed the PolVan Model of Cultural Identity (see Table 2).
Table 2: PolVan Model of Cultural Identity Model

<table>
<thead>
<tr>
<th>Foreigner</th>
<th>Hidden Immigrant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Look different.</td>
<td>Look alike.</td>
</tr>
<tr>
<td>Think different.</td>
<td>Think different.</td>
</tr>
</tbody>
</table>

Polylock and Van Reken (2009) captured the essence of logical but overly simple associations (i.e., one looks different, thus thinks different/one looks the same, thus thinks the same) that are far more nuanced in multi- and cross-cultural spaces. Just because a citizen is taking a course online in their country of citizenship does not mean they are living there (Stewart, 2017). Polylock and Van Reken (2009) also pointed out rather pragmatically that cultural clashes are not limited to the interactions of people from different nations. In ethnoculturally diverse regions or societies, this can also occur at local, regional, and national levels (Dobos, 2011; Gunawardena, 2014, Gunawardena & LaPointe, 2008; Polylock & Van Reken, 2009; Smith & Ayers, 2006). Examples they gave included the experiences of indigenous populations and ethnic/racial minority groups, as well as immigrants, migrants, and refugees. The adverse effect of these domestic cultural clashes can also be seen to some degree in the studies of online students who were also ethnic/racial minorities (see Kaupp, 2012; Smith & Ayers, 2006; Xu & Jaggars, 2014).

Overlooked Student Complexity

Jones (2001) pointed out that “past assumptions about who the typical college student was and how, what, when, why, and where that student attended college are no longer valid” (p. 108), and this notion is equally relevant in light of the literature covering transnational, borderless, and global distance education (Stewart, 2017). When examining the enrollment of so called ‘international students’ in the United States, Allen et al. (2016) pointed out that American institutions “serve very few international distance education students, less than 2% in any sector”, while an additional 3% reside in a location that is unknown to the institution (p. 15). Stewart (2017) and Gemmell & Harrison (2017) illustrated, however, that contemporary globalization trends make such relatively straightforward statistics problematic.

Distance students who live outside of their country of citizenship may not necessarily provide the university with a current address from their present host-nation, and opt instead to use their legal address in their country of citizenship (Stewart, 2017). In other cases, students may simply use a home of record elsewhere due to frequent movement or convenience (Gemmell & Harrison, 2017; Stewart, 2017). Moreover, in cases of dual or multiple citizenship holders, various types of residency visas, marriage visas, long-term work visa holders, or property ownership/rental in both home and host countries, exactly how students should report their legal address to the university is not necessarily clear; more than one genuine option exists. This can complicate how students are identified and classified in demographic and research statistics (Gemmell & Harrison, 2017; Stewart, 2017). Moreover, in supranational organizations like the European Union where residents of member-states can freely move between nations, ways to identify and classify students are not particularly obvious (Gemmell & Harrison, 2017). These nuances can render such demographic and
classification statistics problematic; especially since such situations, though relatively small, are not uncommon. Likewise, for those in careers that require frequent international movement, especially in dense geographic regions such as Europe or Southeast Asia, or located on relatively populated border regions such as the Canadian-U.S. border, accurate information about their residency locations abroad may have a relatively short half-life (Stewart, 2017). Glass et al. (2016) highlighted additional circumstantial evidence for such discrepancies by noting a potential mismatch between a language, MOOC provider origin, and a student’s geographic location.

An Un(der) Represented Population

Dobos (2011) pointed out that “offshore courses are increasingly offered to students of many nations, making responsiveness to local cultures more difficult” (p. 31), but this challenge is not exclusive to face-to-face programs. She further described an offshore campus in Malaysia with an effort to adapt the Australian curriculum for the local Malay student population. However, it became increasingly apparent that not all of the students were in fact local Malaysians, making the effort more challenging than anticipated. Another example is the International Education Program, offered by Framingham State University, which runs cohorts in South Korea (among other countries) in a fly-in/fly-out transnational, hybrid online model (FSU, n.d.). One might expect to find that the majority of enrolled students are Korean, however, given local regulations, Korean citizens are not legally eligible to enroll since it operates outside of an established economic free trade zone and does not meet regulatory/legal requirements. As a result, the students at any of FSU’s program sites in Korea are typically nationals of Canada, the United States, the United Kingdom, South Africa, the Philippines, and Australia. There are in fact no local citizen students, creating a counterintuitively heterogenous transnational student body. While this particular case may be a more extreme example, it highlights the need for greater recognition of student diversity in transnational programs (Andrews & Tynan, 2010; Gemmell & Harrison, 2017; Stewart, 2017).

Andrews and Tynan (2010) illustrated that despite the globalization of education, there is little known about distance learners in this particular arena. They noted how relatively little has been written directly on this topic, emphasizing that a significant proportion of transnational education literature is focused on face-to-face delivery. Ultimately, “references to distance education are limited, serving only to indicate the lack of research. Issues relating to the distance learner are largely passed over in silence” (Andrews & Tynan, 2010, p. 61). Stewart (2017) voiced this same frustration despite earlier and ongoing calls for more nuanced research, especially since prior scholarship seems to consistently overgeneralize students under the label of “international”. Consider the following example where Erichsen and Bolliger (2010) explored the perception of isolation among international students in traditional and online learning environments in a mixed-methods study. Though the term international is used, these students were in fact living in the United States and taking classes online. As Stewart (2017) argued earlier, this oversimplification in student conceptualization can be confusing as these students may be better viewed as expatriate students given their status of sojourn (i.e., indicating the primary purpose for which they are in the foreign country). Another example is from Selwyn (2011a; 2011b) who conducted two studies with globally situated learners from a large federal university in the United Kingdom. However, despite the wide geographic dispersion with students on all continents, there was no clear distinction if some of these students also happened to be citizens of the United Kingdom, or simply living and working abroad, just as Gemmell and Harrison noted in 2017. Selwyn (2011a; 2011b) also noted that the sample was comprised of both native and non-native speakers of English, but again, this does not necessarily mean that non-native speakers were not nationals of the United Kingdom by virtue of their native language not being English.
Stewart (2017) and Gemmell and Harrison (2017) both argued that in addition to knowing the administrative classification of a student assigned by a university, their national origin and current geographic location would more clearly delineate students and enable more nuanced investigation. This limitation has been seen in relatively recent prior scholarship (e.g., Dobos, 2011, Gunawardena, 2003; Gunawardena & LaPointe, 2008; Selwyn, 2011a; Selwyn 2011b; Ziguras, 2008). Another recurring theme in the literature thus far is the oversimplification of complex realities, as well as the deceptive simplicity of the terms used later to describe them (see Andrews & Tynan, 2010; Lowenthal et al., 2009, Gunawardena, 2014). This oversimplification can adversely affect our perceptions (Lowenthal et al., 2009).

Prior Student Conceptualizations

Bean and Metzner (1985) posited that changing demographic trends could explain undergraduate student attrition rates in the United States. They concluded that younger, full time, on campus resident student enrollment was declining with an increase in 1) older, 2) part-time, 3) off-campus resident enrollment. To denote this difference, they affixed the labels traditional and non-traditional to better categorize and investigate students. Despite the rather simple labeling, Bean and Metzner (1985) cautioned that the difference is largely a:

matter of extent; traditional and nontraditional students cannot be easily classified into simple dichotomous categories. These two groups of students can be differentiated on the basis of age, residence, and full- or part-time attendance, not to mention ethnicity, gender, or socioeconomic status, which might have differentiated traditional and nontraditional students a century ago. (p. 488)

Thus, rather than interpreting their model and its characteristics rigidly, the focus should be on, and guided by, the essence that distinguishes non-traditional students from their traditional counterparts; the overall “lessened intensity and duration of their interaction with the primary agents of socialization (faculty, peers) at the institutions they attend” (Bean & Metzner, 1985, p. 488). Nevertheless, given that many community college students and virtually all adult distance students qualify as non-traditional, the model’s categorizations could benefit from being updated to account for 21st century demographic trends. This is especially true when taking into account the specific national frame of reference in the model. One such attempt at building upon these student categories is Stewart’s (2017) model in Figure 1.

Emerging Student Conceptualizations

In a world where transnational distance education is increasingly commonplace, the prevalence of more subtle and nuanced global relationships between students and the academy, or new transnational entities need greater consideration (Gemmell & Harrison, 2017; Stewart, 2017). The studies from Ziguras (2008), Dobos (2011), Selwyn (2011a; 2011b), Wilkins (2016), Gemmell and Harrison (2017), and Stewart (2017) highlight the challenge of describing, defining, and understanding the relevant features, similarities, and differences of students in a transnational setting. The various forms of educational technology utilized in distance education throughout history have simply been expanding the possible range of students, and the myriad of complex situations that influence or cause students to become distance students. Stewart (2017) investigated some characteristics that are only relevant in transnational settings such as the average length of time abroad when initiating academic studies, sojourn status, and type of student (i.e., expatriate or transnational); and presumably additional characteristics not currently thought of would be useful.
Discussion
The Internet has transformed distance education. The change is evident when considering historical scales and access. For example, the Society to Encourage Studies at Home from 1873-1897 in the Boston area in the United States enrolled 10,000 students over a 24 year period (Casey, 2008; Gibson, 2008), while at present hundreds of thousands of students take classes online annually at open universities, as well as distance courses offered from brick-and-mortar universities (Allen et al., 2016; Moore & Kearsley, 2012; Simonson et al., 2012). Participation numbers are even more staggering considering that average MOOC enrollment from well-known, North-American MOOC providers alone (i.e., Coursera, Udacity, edX, HarvardX) is around 45,000 students with the upper end of enrollment numbers potentially in the hundreds of thousands (Jordan, 2014; Jordan, 2015). Nearly 66% of students in these examples were located outside of North America (Glass et al., 2016). The Internet has changed distance education in ways that were otherwise unimaginable (Harasim, 2000).

Implications
The Internet has not only enabled previously unimaginable scales of distance education, but has connected students, instructors, and universities from all parts of the world (Harasim, 2000; Moore & Kearsley, 2012; Simonson et al., 2012). The global expansion of education that the Internet has enabled has introduced more complicated educational scenarios and entities in need of greater recognition (Gunawardena, 2003; Gunawardena, 2014; Gunawardena & LaPointe, 2008; Harasim, 2000; Hewling, 2005; Hoare, 2013; Parrish & Linder-VanBerschot, 2010; Smith & Ayers, 2006). In the context of borderless, transnational distance education, the complexity of a diverse student body has also often been unexpected and counterintuitive (Dobos, 2011; Gemmell & Harrison, 2017; Gunawardena, 2003; Gunawardena, 2014; Smith & Ayers, 2006; Stewart, 2017; Pollock & Van Reken, 2009; Wilkins, 2016).

Conclusion
Recurring themes in the literature are the oversimplification of complex student entities in the transnational distance education space, the over reliance on singular (often national) frames of reference, and inadequate recognition of implicit assumptions about distance students. As a result, these students have fallen through proverbial cracks (Gemmell & Harrison, 2017; Stewart, 2017). Wilkins (2016) reminds us that transnational education is a relatively new field of research that has evolved rapidly over the last 20 years. And undoubtedly, it will continue to do so over the next 20. This point provides ample opportunities for future research into this relatively young and shifting landscape.

Future Research Possibilities
The literature highlights a burgeoning recognition of transnational student body complexities. However, unlike distance students in a national or international context, the voices of transnational and expatriate students are poorly represented. Future research would serve the distance education community well. Additional descriptive studies would allow for regional or global comparisons demographically. Case or collective case studies would more clearly delineate and document the emerging phenomenon (Creswell, 2013; 2015; Stake, 2006; Yin, 2009). Other qualitative methods such as grounded theory studies will help generate hypothesis for the underlying decision making process that can then be tested with additional research (Creswell, 2013; 2015). These decisions are
ultimately the ones that transform “regular” distance students into ones that are potentially expatriate or transnational ones. The use of consistent categorical distinctions will also allow for consistent group-to-group comparisons across any number of dimensions as Gemmell and Harrison (2017) did with help-seeking behavior. In short, to reiterate Wilkins (2016), there are numerous opportunities for research to keep scholars busy.

References


Abstract
Dropout is a major concern in networked learning practices, however, little is known about the issue within the perspective of cultural contexts. On this basis, cultural context and dropout patterns were examined through a mixed-methods approach in which social network analysis and two-way between-group comparisons (culture vs. dropout) were conducted. The sample comprised 179 MOOC learners who were active in a networked extension of the Introduction to Open Education MOOC (#openEDMOOC). The dependent variables of interest were centrality metrics, whereas the independent variables were dropout (i.e., yes-no) and cultural contexts (i.e., high-low). The findings of the social network analysis suggested that non-dropout learners hold central positions in the network. Furthermore, learners from high cultural contexts tend to drop out, whereas those from low contexts tend not to drop out.

Keywords: Dropout; cultural context; massive open online courses; MOOCs; online networked learning

Introduction
“A mind cannot be independent of culture” - Lev Vygotsky

Rooting from the idea that knowledge is a common good of humanity, the philosophy of openness has inspired a number of novel practices, among which can be counted Massive Open Online Courses (MOOCs). This practice has provided individuals all around the globe with lifelong learning opportunities, regardless of the barriers of time and space. The first letter of MOOC refers to massive, which acknowledges its global capacity and reach; the second letter, open, generally means that there is no restriction, barrier or privilege in terms of access to knowledge; and the third and fourth letters refer to online and course, which connote their conventional meanings. Based on these promising characteristics, MOOCs are perceived to be revolutionary and to open up higher education on a massive scale (El Said, 2017). That said, the literature suggests that MOOCs have low retention (Allione & Stein, 2016) and high dropout rates (Jordan, 2014; 2015), nonetheless, little is known, within a cultural context, as to why learners drop out (El Said, 2017). More specifically, empirical studies pertaining to the relationship of culture and dropping out are understudied, and the critical role of culture on dropout rates is usually ignored. In this respect, the current study explored how, and if, cultural contexts impact learner dropout rates.

Literature review
Dropout and retention/completion rates are two points on a continuum with an inverse correlation. That is, while one increases, the other one decreases. Ideally, educators aim for high retention and low dropout rates, being an indicator of a program’s success. Similarly, high dropout rates partly imply a failure to engage learners. While this is the case in conventional educational contexts, high dropout rates in MOOCs is a highly criticized issue (Jordan, 2014). As MOOCs are open and flexible
in many ways, high dropout rates can be tolerated to a certain extent in such an open and flexible learning ecology, although it also interferes with MOOCs’ transformative potential (Yang, Sinha, Adamson & Rosé, 2013).

Though research into dropout rates is not a new concept (Tinto, 1975), online networked learning spaces in general and MOOCs in particular are a topic of heated debate when dropout rates are compared with rates in conventional higher education courses. Due to differences in regard to enrollment numbers and the flexibility of the two contexts, comparing dropout rates may not be appropriate (Eriksson, Adawi & Stöhr, 2017; Jordan, 2014). One of the most comprehensive studies on learner dropout was carried out by Jordan (2014), who reported that completion rates in MOOCs are around 10% whereas dropout rates are as high as 90%. In a follow-up study by Jordan (2015), it was found that MOOCs with longer durations have lower completion rates. It was also observed that when compared to earlier MOOCs, contemporary MOOCs (i.e., 2014 onwards) and MOOCs with auto-grading systems have higher completion and lower dropout rates.

Other studies on completion and dropout have focused on learner motivation (Rothkrantz, 2016), learner types (Kizilcec, Piech & Schneider, 2013), behavioral patterns (Onah, Sinclair & Boyatt, 2014), social factors (Yang et al., 2013), learner demographics (Allione & Stein, 2016) and socio-psychological perspectives (Henderikx, Kreijns & Kalz, 2017). In order to predict, detect and intervene in dropout patterns, contemporary researchers resorted to machine learning, data mining and learning analytics (Kloft, Stiehler, Zheng & Pinkwart, 2014). For instance, these methods have been used to build a dropout prediction model (Xing, Chen, Stein & Marcinkowski, 2016), to identify and classify at-risk dropout learners (Vitiello et al., 2017) and to examine learner behavior patterns (Hong, Wei & Yang, 2017). In short, existing literature demonstrates an increasing interest in and awareness of dropout rates which have been analyzed also through cutting-edge analytical solutions. The cultural context, which is a critical factor for social learning, has, however, been somewhat ignored.

Culture can be defined as a system that is developed collectively by members of a society. It reflects how individuals live and interpret the world around them (Powell, 1997). Even though it is of crucial importance, such a critical factor as a social construct (Boyacigiller, Kleinberg, Phillips & Sackmann, 2004) has not been considered adequately while designing MOOCs (Nkuyubwatsi, 2014; Stager, 2015). It is known that culture influences how one processes information (Matsumoto, 1996), and teaches and learns (Hofstede, 1986). Furthermore, cultural contexts surrounding learners are associated with their engagement and success (Skrypnyk, Hennis & Vries, 2014; Wang, 2007), and reported that culture and learning styles have an interrelated interaction which can be used to predict academic performances (Strang, 2010). Prior research indicates that learners from different cultural contexts can behave differently in their educational task behaviors, help-seeking (Ogan et al., 2015) and collaboration processes (Kim & Bonk, 2002). It is also argued that cultural translation, which refers to proper contextualization as a means of avoiding misunderstandings, should be enabled when participation is culturally diverse (Nkuyubwatsi, 2014). In line with these arguments, considering that learning processes are socially and culturally mediated (Groulx & Silva, 2010), culturally relevant learning processes are considered to be critical for academic success (Adams, Rodriguez & Zimmer, 2018). Taskeen claims (2019, para. 10) that “MOOCs [for instance], if designed inclusively, have the potential and ability to create reciprocal channels between truly diverse global participants, where a plurality of voices can be heard and true diversity of global knowledge can be achieved.” Accordingly, instructional designers need to consider cultural inclusion (Marrone, Mantai & Luzia, 2013) and diversity as a critical factor in increasing learner participation and preventing learner dropout (Tapanes, Smith & White, 2009). The aforementioned literature and accompanying inferences demonstrate the need for further research and justify the current research rationale to investigate dropout with regard to cultural contexts.
Theoretical framework

Hall (1998) noted that communication is one of the core components of any culture, and differences in communication styles can be an indicator of cultural differences, which is a view that is still held today (e.g., Keller, Ucar & Kumtepe, 2018). Hall (1976) proposed high context cultures (HCC) and low context cultures (LCC), resorting to communication styles of societies (Figure 1).

**Figure 1: Characteristics of Hall’s HCC versus LCC**

In HCCs, communication is implicit and based on nonverbal clues, and the message can be understood if the receiver has background information. In LCCs, communication is explicit, and the message is loaded with the information that makes it easy to be understood. In HCCs, interaction is based on nonverbal cues such as tone, gesture and facial expressions, while nonverbal cues are not important in LCCs, as the intended message is spelled out explicitly. In HCCs, the building of relationships and the formation of communities are slow, but last longer. In LCCs, building relationships and community formation begin quickly but last shorter. In HCCs, the boundaries of communities are strong and visible, whereas those boundaries are more flexible in LCCs, meaning that it is easier to become part of a community in LCCs. In contrast, individuals in HCCs can face difficulty in entering, being included and expressing themselves in an unknown community.

Purpose of the Research

The purpose of this embedded mixed-method study is to investigate the cultural context and dropout patterns. The first phase of the research made a qualitative and quantitative exploration of the network data of MOOC learners, and the quantitative information garnered in the first phase was then used in the second phase to assess the contribution of cultural context and dropout patterns to centrality metrics in online networked spaces. Thus, the current research team generated the following research questions:

- How does network formation emerge based on the cultural contexts of dropout and non-dropout learners?
- How do centrality metrics vary with regard to cultural contexts of dropout and non-dropout learners?

Method

Research design

An embedded mixed-design approach was adopted in which the secondary form data were analyzed to support and ameliorate the inferences stemming from the primary form (Creswell, 2012).
The primary form data were retrieved from #OpenEDMOOC and processed through social network analysis (SNA). The secondary form of data revealed after the SNA was processed further through a correlational approach that involved parametric analyses. More specifically, social network analysis (SNA) (Hansen, Shneiderman & Smith, 2010) was utilized to provide quantitative network metrics and qualitative sociograms for the mapping and visualization of network structures. Subsequently, a correlational approach with parametric analyses (Field, 2009) was implemented to augment the primary inferences and to test statistically the association between cultural context and dropout patterns.

Research context

The data were garnered from the Introduction to Open Education MOOC (henceforth, #OpenEDMOOC), which was facilitated by David Wiley and George Siemens on edX platform during the six weeks, and from distributed online networked spaces, such as blogging and microblogging platforms, between October 2 and November 12, 2017. The MOOC covered topics such as openness in education, OERs and copyright issues. There were no prerequisites for participation, and learners could participate through both the edX platform or through Twitter by using the #openEDMOOC hashtag. The data were collected from learners who were active on Twitter.

Sampling

The sample consisted of 179 learners who registered for #OpenEDMOOC and participated in learning activities in open online networked spaces (i.e., Twitter) rather than on closed edX platform. As the data were crawled from online networks, the demographic data of the sample include the learners’ origin countries (Figure 2), time zones, social capitals (e.g., number of followers, people followed, number of created threads) and bios in Twitter profiles.

Data collection and analysis

Data were crawled from online networks using NodeXL software. The network data were analyzed based on quantitative node (local) and network (global) metrics along with qualitative sociograms. In the SNA, node metrics represent the learners while edges represent any relationships across learners (Hansen, Shneiderman & Smith, 2010). While analyzing node metrics, in-degree, out-degree, and betweenness centrality values were calculated (When the graph is directed, degree metrics can be in-degree [points inward] or out-degree [points outward]; betweenness centrality is a measure of a node’s bridging score, that is, centrality in the network which is equal to the number of shortest paths from all other nodes to all others that pass through that node). Nodes’ cultural contexts are based upon Hall’s (1998) HCC and LCC classification that were assigned according to learners’ country of origin. To analyze network metrics, total numbers of the nodes (i.e., learners) and edges (i.e., interactions among the learners), graph density (i.e., interaction), and geodesic distance values were calculated for each week (Graph density is a metric that measures the sum of edges divided by the total number of possible edges and demonstrates the level of interconnectedness of the nodes; Geodesic Distance is the length of the shortest path between vertices). Sociograms were calculated through Harel-Koren Fast Multiscale layout algorithm (Harel & Koren, 2001). Following that, descriptive statistics and two-way between-groups analysis of variance (ANOVA) were used to assess the effects of cultural context and dropout patterns on node metrics addressed in the current work using IBM SPSS Statistics 24.
Strengths and limitations

Along with the significance of the topic, the relative strength of the current work lies in the methodology of data collection and analysis. More specifically, rather than being based on self-reports, the cultural context and the dropout pattern status were identified through learners’ actual network data. However, the study has some limitations, in that the network data is sourced only from those who used the #openEDMOOC hashtag on Twitter, and thus excludes those who preferred to be active on the edX platform. Furthermore, the cultural contexts of the learners were identified according to their country of origin, where Hall’s (1998) high and low culture framework was used as a theoretical lens.

Ethical Issues

This research applied the guidelines set out in Ethical Decision-Making and Internet Research Report (AoIR, 2012). The #openEDMOOC facilitators were informed and permission to use the data was granted. The data were collected from public domains. In the event of any personal data being available, they were removed from the data to ensure complete anonymity.

Findings

First strand: Social Network Analysis (SNA)

The #openEDMOOC data were collected during the course, which lasted for six weeks. To identify dropouts, the unique identifiers of each node in the first week, when none of the learners were identified as dropouts, were compared with the final week. The network data per week (see Figure 3) demonstrated that total number of the nodes and edges decreased towards the final week. Even though there was a decrease in the number of nodes and edges, geodesic distance, which indicates the total number of the steps to reach another node, was steady. Interestingly, in contrast to the decrease in the number of nodes and edges, there was an increase in the graph density value, which is an indicator of interaction in the network. This means that throughout the weeks, the learners on
the periphery of the network dropped out, while the core community interacted with each other more, increasing the overall graph density. In line with the research purposes, only those explicitly active (i.e., nodes with 1+ out-degree; n=179) were included in the analysis. In brief, the completion rate for active nodes was 22.48% while dropout rate was 77.52%.

<table>
<thead>
<tr>
<th>Metrics</th>
<th>W1</th>
<th>W2</th>
<th>W3</th>
<th>W4</th>
<th>W5</th>
<th>W6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number of Nodes</td>
<td>199</td>
<td>162</td>
<td>110</td>
<td>74</td>
<td>82</td>
<td>49</td>
</tr>
<tr>
<td>Total Number of Active Nodes</td>
<td>179</td>
<td>125</td>
<td>75</td>
<td>53</td>
<td>55</td>
<td>38</td>
</tr>
<tr>
<td>Total Number of Edges</td>
<td>535</td>
<td>588</td>
<td>308</td>
<td>166</td>
<td>167</td>
<td>98</td>
</tr>
<tr>
<td>Maximum Geodesic Distance</td>
<td>6</td>
<td>6</td>
<td>7</td>
<td>6</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Average Geodesic Distance</td>
<td>2.8542</td>
<td>2.9652</td>
<td>3.3039</td>
<td>3.1310</td>
<td>3.2270</td>
<td>2.4971</td>
</tr>
<tr>
<td>Graph Density</td>
<td>0.0089</td>
<td>0.0152</td>
<td>0.0169</td>
<td>0.0165</td>
<td>0.0155</td>
<td>0.0251</td>
</tr>
</tbody>
</table>

Figure 3: Dashboard for weekly network metrics.

The overall examination of the #openEDMOOC network was followed by an examination of the first week network. The first week was used as a base as it included all nodes, which further enabled the researchers to mark learners according to their cultural contexts and dropout status. The network data were processed through the Harel-Koren Fast Multiscale layout algorithm (Harel & Koren, 2001), which is a force-directed approach for multi-scale representations.

The node sizes and layout orders are based on the #openEDMOOC learners’ betweenness centrality (Newman, 2005), which refers to the learners’ bridging score and can be defined as the number of shortest paths from all nodes to others that pass through that node (Hansen et al., 2010). In Figure 4, the node shapes are based on their cultural contexts (i.e., square for HCC and disk for LCCs). The node colors denote dropout status (i.e., navy blue for dropouts and green for non-dropouts); the edge colors denote dropout status (i.e., green for dropouts and grey for non-dropouts). The edge widths and opacities are based on edge weight values, which indicate the strength of the relationships among the nodes (Hansen et al., 2010). The sociogram revealed that while non-dropouts hold central positions, dropouts hold peripheral positions (Figure 4). That is, those tightly connected to the learning network were less likely to drop out. It was also observed that all isolated nodes (i.e., nodes that didn’t build any connections with other nodes, n=14), were dropouts.

Figure 4: Non-clustered, directed sociogram of #openEDMOOC.
When #openEDMOOC clustered by dropout/non-dropout pattern through Clauset-Newman-Moore cluster algorithm (Clauset, Newman & Moore, 2004), network metrics revealed intriguing findings (Figure 5). Accordingly, dropouts demonstrated a greater average geodesic distance than non-dropouts. In line with this finding, graph density was examined, and it was found that the network interaction was relatively low when compared to non-dropouts. That is, dropouts were loosely connected to the network and their engagement was low, while non-dropouts were tightly connected, and their engagement was considerably high.

![Figure 5: Dashboard for cross tabulated network metrics.](image)

Second strand: Two-way ANOVA

The in-degree, out-degree and betweenness centrality values were calculated to address node metrics. Betweenness centrality (i.e., bridging score) correlated significantly with both the in-degree ($r=0.53; p<0.001$) and out-degree ($r=0.58; p<0.001$) values. Besides, the in-degree and out-degree values were correlated ($r=0.53; p<0.001$). In this respect, betweenness centrality was considered to be the dependent variable in subsequent parametric analyses. Descriptive statistics pertaining to the betweenness centrality values in terms of both cultural context and dropout condition are provided in Table 1.

<table>
<thead>
<tr>
<th>Cultural context</th>
<th>Dropout</th>
<th>Mean</th>
<th>SD</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>3137.00</td>
<td>5823.94</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>162.36</td>
<td>730.66</td>
<td>124</td>
</tr>
<tr>
<td>Low context</td>
<td>Total</td>
<td>404.74</td>
<td>1920.53</td>
<td>135</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>560.15</td>
<td>596.35</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>11.57</td>
<td>57.74</td>
<td>37</td>
</tr>
<tr>
<td>High context</td>
<td>Total</td>
<td>98.85</td>
<td>305.96</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>2134.89</td>
<td>4663.51</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>127.71</td>
<td>644.36</td>
<td>161</td>
</tr>
<tr>
<td>Total</td>
<td>Total</td>
<td>329.55</td>
<td>1678.32</td>
<td>179</td>
</tr>
</tbody>
</table>

It appeared that the means varied across cultural contexts and dropout conditions in favor of LCC learners and those who did not drop out. A two-way between-groups ANOVA was conducted to identify the individual and combined contributions of cultural contexts and dropout conditions to the betweenness centrality values. As summarized in Table 2, the statistical power pertaining to the current sample was satisfactory for the analysis (i.e., >0.80).
Table 2: Two-way ANOVA summary for betweenness centrality means across cultural contexts (low-high) and dropout conditions (yes-no)

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta²</th>
<th>Observed Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural context (Low-High)</td>
<td>27672725.15</td>
<td>1</td>
<td>27672725.15</td>
<td>11.896</td>
<td>0.001</td>
<td>0.064</td>
<td>0.929</td>
</tr>
<tr>
<td>Dropout Condition (Yes-No)</td>
<td>46169619.77</td>
<td>1</td>
<td>46169619.77</td>
<td>19.847</td>
<td>0.000</td>
<td>0.102</td>
<td>0.993</td>
</tr>
<tr>
<td>Cultural context * Dropout condition</td>
<td>21891910.22</td>
<td>1</td>
<td>21891910.22</td>
<td>9.411</td>
<td>0.003</td>
<td>0.051</td>
<td>0.862</td>
</tr>
<tr>
<td>Error</td>
<td>407101470.58</td>
<td>175</td>
<td>2326294.12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>520820108.71</td>
<td>179</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The ANOVA results revealed that the betweenness centrality mean pertaining to LCC learners was statistically higher than that of HCC learners with a medium effect size ($F_{1,175} = 11.896; p<0.001; \text{partial } \eta^2 = 0.064$). In addition, the betweenness centrality mean of the learners who did not drop out was higher than that of the dropouts, with a medium effect size ($F_{1,175} = 19.847; p<0.001; \text{partial } \eta^2 = 0.102$). Finally, the interaction effect of the cultural context in the dropout condition was statistically significant with a small effect size ($F_{1,175} = 9.411; p<0.003; \text{partial } \eta^2 = 0.051$). That is, the difference between HCC and LCC learners varied across dropout conditions significantly. This pattern is illustrated in Figure 6.

Simple main effect analyses confirmed that learners who did not drop out had a higher betweenness centrality mean than the dropouts in both cultural contexts ($p<0.001$), and the effect size values were high (i.e., eta squared = 0.18 and 0.44 respectively). Besides, the betweenness centrality means of the dropouts were similar between the HCC and LCC learners ($\eta^2 = 0.01$), but somewhat different between the HCC and LCC learners who did not drop out ($\eta^2 = 0.077$). More specifically,
those who did not drop out had a tendency to demonstrate higher betweenness centrality means if they were from a low cultural context.

**Discussion**

The findings of the study revealed some intriguing issues. First of all, as the weeks progressed, the number of active nodes decreased (from 179 to 38) while the degree of the graph density increased (from 0.0089 to 0.0251) (see Figure 3). The density of any network implies interaction and can be defined as ratio of the total number of the edges if all nodes are connected to each other. In this regard, the “M” letter of MOOC (i.e., massive), referring to the number of the enrollments, is worth discussing. More specifically, instructors may prefer small private online courses (SPOCs) for better social interaction opportunities and less dropout rates (Baggaley, 2014), and so instructional designers need to develop better strategies to support the universal ideals of massive and open learning.

The pattern pertaining to dropouts and non-dropouts along with HCCs and LCCs was further investigated through the average geodesic distance (i.e., AGD), which reflects the shortest paths between two nodes in any network (Figure 5). The findings indicated that AGD was considerably better for non-dropouts (AGD: 1.889) than for dropouts (AGD: 3.339). The Milgram Experiment (Milgram, 1967) has shown previously that, ideally, all nodes can reach each other in six steps, even in very large networks. In other words, the lower the AGD, the better the network formation is available to connect and interact in the network structure. Considering value as a threshold for AGD, learners from LCCs build closer connections than HCCs, which results in a stronger engagement with the network. The graph density values support the results of AGD (Figure 5). Accordingly, the graph density favors LCCs (0.011) over HCCs (0.005); and non-dropouts (0.111) over dropouts (0.004). This supports the ANOVA results depicted in Figure 6. Accordingly, learners from LCCs build better connections that require fewer steps to interact, and this serves as a social glue, encouraging the student to stick to the learning network and not be a dropout. The importance of this finding is twofold. First, interaction is a vital ingredient in online learning spaces for meaningful learning experiences (Moore, 1989) and lower dropout and higher retention rates; and second, considering that culture is one of the indicators, strategies to lessen transactional distance (Moore, 1993), can be helpful in preventing high dropout rates.

SNA findings have further demonstrated that isolated learners, referred to as lurkers (Sun, Rau & Ma, 2014), have a tendency to drop out. As illustrated in the sociogram (Figure 4), all isolated nodes (n=14) appear to be dropouts, and so it can be suggested that course facilitators need to adopt new roles to welcome, embrace and pull these types of learners from the peripherals to the core network. The network structure in Figure 4 shows that the more central positions the learners occupy, the less likely they are to drop out. This finding also indicates the significance of social learning and community formation processes for the provision of social interaction.

The betweenness centrality values of LCCs (m=404.74) seem to be more salient than those of HCCs (m=98.85) (Table 1). The betweenness centrality outputs of cultural contexts imply that learners from LCCs hold more central positions and have the ability to bridge other nodes or clusters, which emerge as a catalyst for a tightly-connected network formation. Furthermore, the betweenness centrality for non-dropouts in any cultural context (BC: 3137.00 in LCCs; BC: 560.15 in HCCs) outweighs that of dropouts (BC: 162.36 in LCCs; BC: 11.57 in HCCs). The SNA findings and ANOVA results support the idea that betweenness centrality can be used as a predictor of dropout, both in HCCs and LCCs. The findings of this study further corroborate the assumptions of Bayer, Bydzovská, Géryk, Obsivac and Popelinsky (2012), who maintain that SNA can be used to predict dropouts. This finding further
confirms Liu et al. (2016), who state that a students’ country of origin and the cultural context they belong to can be an indicator of their performance and behaviors. In addition, the findings support the assumptions of Yang et al. (2013) who claim that betweenness centrality is highly related to dropout rates. The findings of the present study also suggest that cultural contexts may define learners’ cultural distances to predict learners’ interaction and dropout status, which is in line with the findings of existing literature. That is, culture predicts every aspect of our lives (Hofstede, 1986), and cultural distance (Shenkar, 2001) has an effect on how we learn and behave in learning spaces (Alabdullaziz, 2015; Skrypnyk et al., 2014; Stager, 2015; Tapanes et al., 2009).

According to Hall (1998), learners from HCCs tend to be dropouts. Their characteristics involve indirect and implicit messages, frequent non-verbal communication, and intuitively and emotionally driven decisions. On the other hand, learners from LCCs tend not to be dropouts, and their characteristics involve direct and clear messages, less frequent non-verbal messages, and decisions that are taken on the basis of facts and evidence. In the original theoretical framework of Hall (1998), learners from HCCs seem to prefer long-term relationships, while learners from LCCs can survive with short-term relationships. Considering the lengths of MOOCs, this can be a crucial factor explaining dropout and retention. For learners in HCCs, there is a distinction between the in-group and out-group, while in LCCs, this distinction is more flexible and open. In this regard, the learners’ perceived sense of community can be another factor affecting dropout status. Though synchronous and asynchronous communication opportunities are available in online networked spaces, most of the communication is text-based, since learners are globally distributed in time and space. On the other hand, the low reliance on text-based communication in HCCs can explain less connection to the network and low betweenness centrality. In contrast, the high reliance on text-based communication in LCCs can explain the high connection to the network and high betweenness centrality.

**Conclusion and theoretical/practical implications**

Online networked learning spaces are global and distributed, and accommodate culturally-diverse learners. The fundamental role of culture in interpreting behavioral communication patterns cannot be ignored, as these contexts are subject to cultural influences. Based on these thoughts, the present study examines the dropout patterns of learners in online networked spaces through the lenses of high and low cultural contexts. The research findings revealed that cultural contexts affected learners’ dropout patterns.

As learning spaces have become more online and network-based, there is a need for further research focusing on cultural issues in these spaces. Other theoretical lenses, such as GLOBE Societal Clusters (House, Hanges, Javidan, Dorfman & Gupta, 2004) and Hofstede’s National Cultural Dimensions (NCD) (Hofstede, 1986) can help enrich our understanding on how culture affects communication, interaction and dropout patterns.

The present study has several pedagogical and practical implications. For instance, Universal Instructional Design (UID) provides core principles that embrace learners from diverse backgrounds and provide equality and accessibility (Scott, McGuire & Shaw, 2003). In line with the inferences of this approach, instructors can design online learning spaces in such a way that learners from different cultural backgrounds are welcomed. To achieve this, vital components of the culture, such as language, symbols, norms, beliefs, and values, can be considered during instructional design.

Considering the global nature of MOOCs and other similar online networked learning practices that are global, multiple entry points can be provided for a culturally-diverse learner population. Universal learning processes can be designed to welcome any learners from different cultural contexts. In addition, learners can be provided with opportunities to customize their learning processes, which
can lower barriers stemming from cultural differences, and ease the integration of learners into the learning process. Innovative approaches of learning analytics can also be used to identify and analyze learners from different cultural contexts so as to provide communication opportunities that fit their preferences. Additionally, direct communication after the identification of learners on the peripherals of the networks can be helpful in pulling them to the central network and building stronger connections to prevent dropout.

The findings of this study are based upon learners’ actual behaviors in online networks and are derived from objective and quantitative data. Nonetheless, culture is a significant component of social structures, both in online and offline spaces, and so qualitative in-depth studies that involve both internal and external motives may ensure a broader understanding of culture and dropout patterns.

Acknowledgements

We would like to thank Suzan Koseoglu from Goldsmith, University of London, for her valuable comments on the initial version of the manuscript.

The research was supported by the Anadolu University Scientific Research Projects Commission with grant no: 1805E123.

References


Hong, B., Wei, Z., & Yang, Y. (2017, August). Discovering learning behavior patterns to predict dropout in MOOC. In *Proceedings of the 12th International Conference on Computer Science and Education (ICCSE)*. Houston, TX, USA.


Open Practices in Public Higher Education in Portugal: faculty perspectives

Paula Cardoso, Lina Morgado & António Teixeira
LE@D, Universidade Aberta (Portugal)
paula.cardoso@ipleiria.pt, lina.morgado@uab.pt & antonio.teixeira@uab.pt

Abstract
In recent years, the Open Educational Resources (OER) and Open Access (OA) movements have been essential in creating opportunities in all scholarly activities, within the context of higher education. The main purpose of this research was to understand how perceptions and practices of faculty towards OER are related to their perceptions and practices towards OA. It is an exploratory and descriptive study, with a mixed methods approach, undertaken in Portugal. Results indicate that, although faculty already show some degree of knowledge and use of OER and OA in their teaching and research practices, there is still a general lack of knowledge in both fields. However, the convergence of perceptions regarding both fields provide evidence on the possibility of a common approach to both fields in faculty’s educational practices, with the purpose of opening up their educational and scientific resources, thus reinforcing the principles of transparency, collaboration and openness to knowledge.

Keywords: Open Educational Resources; Open Access; Open Education; Open Educational Practices; Scholarship

Introduction
As with all spheres of society, Higher Education Institutions (HEIs) have been facing a number of challenges that question not only their practices but also the very role of higher education in the 21st century. HEIs no longer have an exclusive role, although they remain an important space for knowledge building (Hargreaves, 2003). The increase of virtual learning communities also has an effect on the role of HEIs as privileged communities of knowledge development and discussion. Also, their traditional learning certification function has recently been questioned by the emergence of initiatives in the field of Open Education, particularly Open Educational Resources and Open Educational Practices.

When we look at the 21st century institutions, we identify their multiple functions: teaching, research, public involvement and incubators of new ideas and business. Thus, we revisit Ernest Boyer’s (1990) model of academic identity analysis and consider the concept of scholarship, to converge the perspectives on faculty’s teaching and research activities, in the broader spectrum of the movement of openness to knowledge.

Theoretical Framework
Open Educational Resources and the teaching function
The movement of Open Educational Resources (OER) has greatly developed over the last decade and research on the topic has evolved into numerous perspectives, such as the usefulness and impact of resources, their quality and the quality of their repositories (McAndrew et al., 2008; McGreal, 2013; Atenas & Havemann, 2014), metadata and alignment of standards (Achieve, 2011;
Atenas, Havemann & Priego, 2014) and the formal recognition, among institutions, of learning with OER (Hilton, Murphy & Ritter, 2014).

Previous studies have focused on trying to understand faculty’s attitudes towards OER, namely the main barriers and incentives regarding the sharing of educational resources. For Alevizou (2012), there is a lack of professional incentives and also cultural issues regarding the open sharing of materials. Similarly, barriers also include uncertainties about the origin and context where the resources have been produced (Campbell, Barker, Currier & Syrotiuk, 2013), the lack of confidence, ability or willingness to contribute with revised and remixed resources (Petrides & Nguyen, 2008), the general lack of knowledge on OER (de los Arcos, Cannell & McIlwhan, 2016; Allen & Seaman, 2016), as well as the perception of the time and effort necessary to research and assess OER (OECD, 2007; OPAL, 2011; McGill, Falconer, Littlejohn & Beetham, 2013; Allen & Seaman, 2014; Corrall & Pinfield, 2014). On the other hand, there is also a lack of support, incentives and rewards (Hylén, 2006; Charlesworth, Ferguson, Schmoller, Smith & Tice, 2007; Yuan, MacNeill & Kraan, 2008) and the fact that the authorship of OER is not taken into account for career progression, together with the absence of an institutional space to openly share resources (Friesen, 2009; Reed, 2012). There are also studies that address copyright barriers, particularly the absence of clear institutional policies on intellectual property over the resources produced (Charlesworth et al., 2007; Reed, 2012). This does not help clarify the confusion that characterizes teachers’ knowledge of their copyright (Hylén, 2006; Charlesworth et al., 2007; Yuan et al., 2008; Friesen, 2009; Reed, 2012; Rolfe, 2012), and thus, attention should be paid to clarifying intellectual property issues and the existence of open licenses (Reed, 2012). Regardless of whether they reveal some anxiety about an appropriate authorship of resources, the studies conducted by Reed (2012) and Rolfe (2012) conclude that faculty have a positive perception towards OER sharing.

On the other hand, the incentives identified in literature are the altruistic motivation of sharing, reputation and visibility, both of the teaching work and of the institution (OECD, 2007; Sclater, 2010). According to Sclater (2010), altruistic motivation is linked to the premise that everyone has the right to education, so learning must be made available and made available to all. Similarly, Rolfe (2012) and Davis et al. (2010) support the belief in open education as a fundamental motivation for those who share their resources openly as a way of demonstrating an open culture (Brown & Adler, 2008). Opposite to this belief in open education is resistance to the reuse and sharing of Open Educational Resources related to status and identity aspects (Weller, 2010).

Open Access and the research function

With regard to Open Access (OA), several researchers have studied the importance of mandates in promoting open access publishing practices. Already in 2005, Pinfield argued that mandatory self-archiving would be a faster way to overcome cultural and management obstacles. A research conducted by Swan (2006) asked researchers how they would react if self-archiving in an open access repository was required by the research or funding institution; the vast majority (81%) said they would willingly do it, while about 14% of researchers mentioned they would do it reluctantly and 5% would not do it at all. This study is in line with authors like Gargouri et al. (2010) and Smith, Yates and Chudasama (2010), who conclude that policies based on recommendations are not sufficient for a significant increase in self-archiving by researchers.

The OA movement is well defined and in rapid expansion, both internationally and in Portugal, with a growing involvement of the scientific and academic community. However, a number of recent studies have concluded that there is still lack of knowledge by researchers regarding key concepts.
in the openness movement, such as copyright and licensing issues. In fact, a survey conducted with Portuguese researchers in 2012, concluded that there is a significant difference between researchers’ opinions and their practices, regarding the principles of open access (Rodrigues et al., 2013). That is, although the vast majority (92%) of researchers agree with the principle of open access to publicly funded research, only 70% reported to publish in OA. A second conclusion of the study is that there is a significant lack of knowledge by researchers about open access policies. In short, there is a significant difference between the opinion and the knowledge and practice of researchers.

Scholarship and the movement of openness to knowledge

The current research supports the perspective that the open knowledge movements play a fundamental role in the 21st century education, namely in higher education, since they make knowledge and access to services available to society, which, in turn, gives institutions a unique social potential, in the multidimensionality of their functions.

There are different perspectives on the influence of these movements in current academic practices, but they all highlight the concepts of sharing, collaboration and openness to knowledge. As noted by Conole & Alevizou (2010), openness is a trend, both in terms of the production and sharing of educational resources, and of increasingly open scientific research. This is also the perspective of Veletsianos & Kimmons (2012, p. 167), when they refer that “open scholarship refers to teaching and research practices that espouse openness”.

There is a growing concern to bring theoretical and empirical convergence between research and education. Corrall & Pinfield (2014) suggest that promoting the convergence of “different open domains” and recognizing the common advantages, while taking into consideration their particularities, may bring additional benefits for both institutions and faculty. There are obstacles, usually associated with issues such as intellectual property, business models and sustainability. However, the potential advantages of approaching the movement of openness to knowledge as a whole are increasingly recognized: (i) visibility and impact; (ii) reuse; (iii) innovation and agility; (iv) cost reduction; (v) quality improvement; (vi) reputation and trust. These potential advantages, shared between the different domains, can serve as a reference base to define a single policy agenda and to simultaneously monitor activity and progress in each of the domains.

By analyzing the different perspectives and respective terminologies, we find that the debate around the changes in academic practices by digital environments continues to be largely influenced by Boyer’s model (1990) and its multidimensional perspective. For instance, Pearce, Weller, Scanlon and Kinsley (2010) retrieve the model proposed by Boyer (1990) and, focusing on the potential of technologies - albeit from a very technological perspective - to promote more transparent and more open practices, explore the changes driven by openness in each of the academic functions (figure 1).
In the first dimension, related to the discovery of new knowledge in a given scientific area, Pearce et al. (2010) point out that computer tools allow the generation and analysis of large amounts of data, which can easily be shared with the academic community, becoming open data.

In the dimension of integration, where new knowledge is contextualized and applied to more comprehensive problems, the authors focus on traditional mechanisms through which researchers communicate their findings, including publication mechanisms in scientific journals, modified by more open peer review processes and open access publication.

The dimension of application is influenced by how new communication forms are used to participate in more global debates, in which faculty have access to larger audiences, due to “communication disintermediation” (Pearce et al., 2010).

Finally, the greatest impact of digital technologies and more open approaches occurred in the dimension of teaching, where the digitization of educational resources made them easily reproducible and shareable on a global scale, which in turn allowed the development of the OER movement.

Thus, the concept of scholarship in the digital age is influenced by different aspects, such as collaborative and networked work, the sharing of digital data and a greater emphasis on openness to knowledge, providing more informal, collaborative and more open teaching and research practices, in all their dimensions. But how exactly is this portrayed in faculty’s perceptions and, more importantly, in their practices?

**Methodology**

The main question that guided the current research was: How are the perceptions and practices of faculty at public higher education institutions in Portugal concerning Open Educational Resources related to their perceptions and practices regarding Open Access?

The research design selected for this study was exploratory and descriptive in nature, which, according to Hernández Sampieri, Fernández Collado and Baptista (2013), is suitable for cases when there isn’t much information available on the research subject, making it possible to obtain greater knowledge on a given phenomenon.
In order to identify faculty’s knowledge, practices and perceptions regarding Open Educational Resources and Open Access in the context of their teaching and research practices, a questionnaire survey was sent to the faculty of all public higher education institutions (HEIs) in Portugal and data were then subject to a descriptive analysis. The instrument was adapted from a questionnaire (Rodrigues, Boavida, Carvalho, Saraiva & Príncipe, 2013), previously applied to the same target population that enquired about the perception, opinion and practices of Portuguese researchers regarding Open Access to scientific research. After validation by experts and a pretest, the final survey was administered online, through the LimeSurvey platform, between July and December 2015. The final survey had a total of 30 closed questions, which allowed participants to select from a Likert scale, as shown in the next section and a final open question, asking for comments and suggestions.

Results and Findings

Of the 348 participants in the survey, 58% represent the female gender, with around 71% in the age group between 40 and 59 years of age and 73.5% of respondents have 11 or more years of service. The most represented subsystem of education is polytechnic higher education, with 62.9% of respondents. Data on the professional situation portray professional stability, with regard to contract situation (approximately 73.3% have exclusive contracts) and to the most represented categories, which are career categories (18.7% of all respondents), with our sample being representative of the population. All scientific areas are represented in the sample and Social Sciences are the most represented scientific area (36.2% in education and 40.2% in research), followed by Engineering and Technology Sciences (19.8% in education and 17.8% in research).

Open Educational Resources

Data show (Table 1) that the majority of respondents are aware of the existence of OER repositories. However, similarly to other studies (de los Arcos et al., 2016; Allen & Seaman, 2014) it is not a generalized knowledge, because when asked about more specific aspects of OER, such as institutional policies or initiatives, the lack of knowledge increases.

<table>
<thead>
<tr>
<th>Knowledge on OER</th>
<th>Mean</th>
<th>SD</th>
<th>Insufficient</th>
<th>Sufficient</th>
<th>Good</th>
<th>Very Good</th>
</tr>
</thead>
<tbody>
<tr>
<td>OER concept</td>
<td>2.32</td>
<td>0.98</td>
<td>89 (25.6%)</td>
<td>99 (28.4%)</td>
<td>121  (34.8%)</td>
<td>39 (11.2%)</td>
</tr>
<tr>
<td>OER repositories</td>
<td>2.20</td>
<td>0.98</td>
<td>102 (29.3%)</td>
<td>110 (31.6%)</td>
<td>99   (28.4%)</td>
<td>37 (10.6%)</td>
</tr>
<tr>
<td>Open licenses</td>
<td>1.85</td>
<td>0.96</td>
<td>162 (46.6%)</td>
<td>102 (29.3%)</td>
<td>57   (16.4%)</td>
<td>27 (7.8%)</td>
</tr>
<tr>
<td>Institutional policies on OER</td>
<td>1.61</td>
<td>0.84</td>
<td>203 (58.3%)</td>
<td>87 (25.0%)</td>
<td>47   (13.5%)</td>
<td>11 (3.2%)</td>
</tr>
<tr>
<td>International initiatives on OER</td>
<td>1.53</td>
<td>0.82</td>
<td>224 (64.4%)</td>
<td>73 (21.0%)</td>
<td>40   (11.5%)</td>
<td>11 (3.2%)</td>
</tr>
<tr>
<td>Copyright</td>
<td>2.12</td>
<td>0.96</td>
<td>109 (31.3%)</td>
<td>119 (34.2%)</td>
<td>88   (25.3%)</td>
<td>32 (9.2%)</td>
</tr>
</tbody>
</table>

SD – Standard deviation; Mode in bold.
When asked about their knowledge on Copyright, most respondents self-rated their knowledge as positive. However, almost half of the respondents indicated they were not sure about who owns the copyright of teaching materials they produced at their institution (Figure 2). These results are in line with the results of similar studies, which conclude that there is some confusion regarding copyright (Jameela, 2014; Rolfe, 2012; Reed, 2012; and Charlesworth et al., 2007).

![Figure 2: Who owns copyright of teaching materials](image)

With regard to OER-related activities, the average of responses is below the option “Often” for frequency, in all items, yet the most used activities are the adaptation of OER to the context of needs and research in OER repositories (Table 2).

**Table 2: Frequency of use: OER-related activities**

<table>
<thead>
<tr>
<th>Frequency of use: OER-related activities</th>
<th>Mean</th>
<th>SD</th>
<th>Never</th>
<th>Rarely</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>I reuse existing OER in original form</td>
<td>1.98</td>
<td>0.86</td>
<td>123 (35.3%)</td>
<td>118 (33.9%)</td>
<td>98 (28.2%)</td>
<td>9 (2.6%)</td>
</tr>
<tr>
<td>I adapt existing OER to the context of my needs</td>
<td>2.21</td>
<td>0.90</td>
<td>97 (27.9%)</td>
<td>96 (27.6%)</td>
<td>141 (40.5%)</td>
<td>14 (4.0%)</td>
</tr>
<tr>
<td>I share OER adapted by me</td>
<td>1.86</td>
<td>0.86</td>
<td>150 (43.1%)</td>
<td>106 (30.5%)</td>
<td>84 (24.1%)</td>
<td>8 (2.3%)</td>
</tr>
<tr>
<td>I share OER produced by me</td>
<td>2.01</td>
<td>0.92</td>
<td>129 (37.1%)</td>
<td>100 (28.7%)</td>
<td>104 (29.9%)</td>
<td>15 (4.3%)</td>
</tr>
<tr>
<td>I research OER repositories</td>
<td>2.18</td>
<td>0.93</td>
<td>106 (30.5%)</td>
<td>89 (25.6%)</td>
<td>136 (39.1%)</td>
<td>17 (4.9%)</td>
</tr>
<tr>
<td>I publish in OER repositories</td>
<td>1.75</td>
<td>0.79</td>
<td>159 (45.7%)</td>
<td>119 (34.2%)</td>
<td>67 (19.3%)</td>
<td>3 (0.9%)</td>
</tr>
</tbody>
</table>

SD – Standard deviation; Mode in bold.

Data seem to reveal that there is already some use of OER, as nearly half of the respondents say that they “Often” or “Always” adapt OER and search OER repositories, although most respondents do not know, as discussed above, formal policies or initiatives. These data corroborate the conclusion of Rolfe (2012), who concludes that some OER-related activities occur more frequently in local and individual terms than with more formal approaches and also with Hylén’s (2006) perspective on the
fact that OER represent a bottom-up phenomenon, in which the management level of institutions is not involved nor is often aware of the activities carried out.

**Barriers to the use of OER** (Table 3) were divided into personal and political barriers, OER quality and adequacy barriers and institutional barriers. Furthermore, all the barriers had their modal value in the “Important” option, with very little discrimination among the different types of barriers. It is possible that not positioning themselves strongly regarding the importance given to potential barriers to the use of OER may also reveal lack of more in-depth knowledge.

Table 3: Importance of barriers to the use of OER

<table>
<thead>
<tr>
<th>Importance of Barriers to the use of OER</th>
<th>Mean</th>
<th>SD</th>
<th>Not important</th>
<th>Slightly important</th>
<th>No opinion</th>
<th>Important</th>
<th>Very important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insufficient technical support at institution</td>
<td>3.65</td>
<td>1.08</td>
<td>11 (3.2%)</td>
<td>54 (15.5%)</td>
<td>55 (15.8%)</td>
<td>154 (44.3%)</td>
<td>74 (21.3%)</td>
</tr>
<tr>
<td>Insufficient legal support at institution</td>
<td>3.55</td>
<td>1.12</td>
<td>17 (4.9%)</td>
<td>57 (16.4%)</td>
<td>60 (17.2%)</td>
<td>147 (42.2%)</td>
<td>67 (19.3%)</td>
</tr>
<tr>
<td>Lack of reward system to create OER</td>
<td>3.54</td>
<td>1.22</td>
<td>23 (6.6%)</td>
<td>62 (17.8%)</td>
<td>54 (15.5%)</td>
<td>123 (35.3%)</td>
<td>86 (24.7%)</td>
</tr>
<tr>
<td>Lack of time to create or adapt OER</td>
<td>3.96</td>
<td>1.05</td>
<td>9 (2.6%)</td>
<td>34 (9.8%)</td>
<td>42 (12.1%)</td>
<td>141 (40.5%)</td>
<td>122 (35.1%)</td>
</tr>
<tr>
<td>Lack of quality in existing OER</td>
<td>3.34</td>
<td>1.07</td>
<td>23 (6.6%)</td>
<td>52 (14.9%)</td>
<td>96 (27.6%)</td>
<td>137 (39.4%)</td>
<td>40 (11.5%)</td>
</tr>
<tr>
<td>Lack of hardware/software to create or adapt OER</td>
<td>3.15</td>
<td>1.18</td>
<td>29 (8.3%)</td>
<td>92 (26.4%)</td>
<td>67 (19.3%)</td>
<td>118 (33.9%)</td>
<td>42 (12.1%)</td>
</tr>
<tr>
<td>Lack of skills to create or adapt OER</td>
<td>3.61</td>
<td>1.27</td>
<td>29 (8.3%)</td>
<td>48 (13.8%)</td>
<td>53 (15.2%)</td>
<td>116 (33.3%)</td>
<td>102 (29.3%)</td>
</tr>
<tr>
<td>Lack of culturally relevant OER</td>
<td>3.17</td>
<td>1.05</td>
<td>17 (4.9%)</td>
<td>83 (23.9%)</td>
<td>104 (29.9%)</td>
<td>111 (31.9%)</td>
<td>33 (9.5%)</td>
</tr>
<tr>
<td>Lack of OER in user’s native language</td>
<td>3.00</td>
<td>1.23</td>
<td>43 (12.4%)</td>
<td>92 (26.4%)</td>
<td>77 (22.1%)</td>
<td>95 (27.3%)</td>
<td>41 (11.8%)</td>
</tr>
<tr>
<td>Lack of interest in pedagogical innovation</td>
<td>3.34</td>
<td>1.33</td>
<td>51 (14.7%)</td>
<td>48 (13.8%)</td>
<td>47 (13.5%)</td>
<td>134 (38.5%)</td>
<td>68 (19.5%)</td>
</tr>
<tr>
<td>Lack of national/regional support policies</td>
<td>3.56</td>
<td>1.14</td>
<td>23 (6.6%)</td>
<td>43 (12.4%)</td>
<td>68 (19.5%)</td>
<td>143 (41.1%)</td>
<td>71 (20.4%)</td>
</tr>
<tr>
<td>Lack of institutional support strategies/policies</td>
<td>3.82</td>
<td>1.16</td>
<td>17 (4.9%)</td>
<td>38 (10.9%)</td>
<td>55 (15.8%)</td>
<td>120 (34.5%)</td>
<td>118 (33.9%)</td>
</tr>
<tr>
<td>Lack of interest in creating and adapting OER</td>
<td>3.41</td>
<td>1.31</td>
<td>44 (12.6%)</td>
<td>47 (13.5%)</td>
<td>54 (15.5%)</td>
<td>127 (36.5%)</td>
<td>76 (21.8%)</td>
</tr>
</tbody>
</table>

SD – Standard deviation; Mode in bold.

Still, the barriers to which the respondents have assigned a greater degree of importance are the lack of time to create or adapt OER, followed by the lack of institutional support policies and strategies and insufficient technical support from institutions. Thus, similar to other studies (Allen & Seaman, 2014; McGill et al., 2013; Reed, 2012; Yuan et al., 2008; OECD, 2007; Charlesworth et al., 2007; and Hylén, 2006), we find that the main barriers are essentially institutional and
personal. On the one hand, faculty consider that there are time constraints which, in turn, are reinforced by the lack of recognition and support from the institutions. On the other hand, the barriers that have been attributed less importance to are curiously barriers in the quality and adequacy of OER. The fact that these options stand out as the ones with the highest number of responses in the category “No opinion” also reveals some lack of knowledge regarding specific issues of Open Educational Resources, more precisely in linguistic, technical and quality issues of the resources themselves.

Similarly to what happened with the barriers, almost all incentives to the use of Open Educational Resources (Table 4) had their mode in the “Important” option, except for the item “Training / workshops for teachers”, whose modal value was in the “Very important” category. The existence of an institutional platform and an OER sharing community were also two of the incentives considered as most important by respondents, which is, in a way, in line with other studies (Seonghee & Boryung, 2008; Friesen, 2009), that conclude that the introduction of an institutional repository would be an important factor in promoting a formal culture of sharing and that, within institutional policies and strategies, it would be important for faculty to feel supported, to develop more open practices in the context of their institution. Although the use of OER can be done informally, faculty who already do it do not have the opportunity to do so in a more formal context, which was considered desirable in previous studies (Atkins, Brown & Hammond, 2007; Conole, 2010; Hylén, 2006).

Table 4: Importance of incentives to the use of OER

<table>
<thead>
<tr>
<th>Importance of incentives to the use of OER</th>
<th>Mean</th>
<th>SD</th>
<th>Not important</th>
<th>Slightly important</th>
<th>No opinion</th>
<th>Important</th>
<th>Very important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical support to the use of OER</td>
<td>4.05</td>
<td>0.98</td>
<td>7 (2.0%)</td>
<td>29 (8.3%)</td>
<td>30 (8.6%)</td>
<td>157 (45.1%)</td>
<td>125 (35.9%)</td>
</tr>
<tr>
<td>Legal support to the use of OER (copyright issues)</td>
<td>3.98</td>
<td>0.99</td>
<td>6 (1.7%)</td>
<td>35 (10.1%)</td>
<td>33 (9.5%)</td>
<td>161 (46.3%)</td>
<td>113 (32.5%)</td>
</tr>
<tr>
<td>Use of OER as specific criterion in faculty evaluation</td>
<td>3.68</td>
<td>1.21</td>
<td>24 (6.9%)</td>
<td>49 (14.1%)</td>
<td>37 (10.6%)</td>
<td>143 (41.1%)</td>
<td>95 (27.3%)</td>
</tr>
<tr>
<td>Allocation of hours to create and adapt OER</td>
<td>3.78</td>
<td>1.14</td>
<td>13 (3.7%)</td>
<td>54 (15.5%)</td>
<td>32 (9.2%)</td>
<td>148 (42.5%)</td>
<td>101 (29.0%)</td>
</tr>
<tr>
<td>System of OER quality assurance</td>
<td>3.99</td>
<td>0.89</td>
<td>7 (2.0%)</td>
<td>19 (5.5%)</td>
<td>40 (11.5%)</td>
<td>186 (53.4%)</td>
<td>96 (27.6%)</td>
</tr>
<tr>
<td>Training/workshops for faculty</td>
<td>4.24</td>
<td>0.99</td>
<td>7 (2.0%)</td>
<td>23 (6.6%)</td>
<td>27 (7.8%)</td>
<td>112 (32.2%)</td>
<td>179 (51.4%)</td>
</tr>
<tr>
<td>Existence of OER sharing community</td>
<td>4.05</td>
<td>0.99</td>
<td>4 (1.1%)</td>
<td>34 (9.8%)</td>
<td>35 (10.1%)</td>
<td>142 (40.8%)</td>
<td>133 (38.2%)</td>
</tr>
<tr>
<td>Existence of institutional platform for OER sharing</td>
<td>4.15</td>
<td>0.92</td>
<td>3 (0.9%)</td>
<td>25 (7.2%)</td>
<td>32 (9.2%)</td>
<td>145 (41.7%)</td>
<td>143 (41.1%)</td>
</tr>
<tr>
<td>Existence of regional/ national platform for OER sharing</td>
<td>3.77</td>
<td>1.00</td>
<td>7 (2.0%)</td>
<td>48 (13.8%)</td>
<td>35 (10.1%)</td>
<td>186 (53.4%)</td>
<td>72 (20.7%)</td>
</tr>
<tr>
<td>Existence of funded projects to create OER</td>
<td>3.91</td>
<td>1.08</td>
<td>7 (2.0%)</td>
<td>47 (13.5%)</td>
<td>38 (10.9%)</td>
<td>134 (38.5%)</td>
<td>122 (35.1%)</td>
</tr>
<tr>
<td>Mandatory to share teaching materials</td>
<td>3.08</td>
<td>1.31</td>
<td>50 (14.4%)</td>
<td>85 (24.4%)</td>
<td>50 (14.4%)</td>
<td>112 (32.2%)</td>
<td>51 (14.7%)</td>
</tr>
</tbody>
</table>

SD – Standard deviation; Mode in bold.

Open Praxis, vol. 11 issue 1, January–March 2019, pp. 55–70
In turn, the items that would least encourage respondents to use Open Educational Resources are the use of OER as a specific criterion in faculty evaluation and the obligation to share the teaching materials produced. We may assume that faculty then reject the idea of compulsory use of OER in their practices. Moreover, when comparing the importance attributed to the barriers with the one given to incentives, since the lack of time was the barrier with the highest response rate, it would be expected that the allocation of hours to create and adapt OER would also stand out as one of the most important incentives, which was not the case. If, on the one hand, respondents value training and institutional support, on the other hand it is also clear that, according to them, institutional strategies should not be mandatory.

Regarding perceptions towards creating and sharing OER, data show that most respondents perceive OER as an added value for the impact of their work as faculty and also for the institution, insofar as it promotes practices of sharing and collaboration, which, in turn, give visibility and value the institution’s reputation. However, it is interesting that the item with the highest degree of agreement, with the modal value in the “I totally agree” option, is the item “I would like to be recognized as an author of the resources I share”. While acknowledging the benefits and expressing a positive attitude towards OER, the issue of authorship and recognition is important. This was also concluded in the OECD study (2007), where, despite the low response rate, this was one of the factors considered most important in the perspective of those who produced open resources.

Open Access

Regarding the Open Access (OA) domain, in terms of knowledge (Table 5), we found that more than 85% of the respondents self-reported a positive knowledge of the Open Access concept (86.5%), as well as repositories (85.4%) and open access journals (89%). In general, the degree of knowledge in the OA domain is slightly higher than the degree of knowledge in the field of OER. The lowest knowledge is reported in international open access initiatives, similarly to what happened with OER.

<table>
<thead>
<tr>
<th>Knowledge on Open Access</th>
<th>Mean</th>
<th>SD</th>
<th>Insufficient</th>
<th>Sufficient</th>
<th>Good</th>
<th>Very Good</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open Access concept</td>
<td>2.60</td>
<td>0.92</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>47 (13.5%)</td>
<td>102 (29.3%)</td>
<td>141 (40.5%)</td>
<td>58 (16.7%)</td>
</tr>
<tr>
<td>Open Access repositories</td>
<td>2.55</td>
<td>0.92</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>51 (14.7%)</td>
<td>106 (30.5%)</td>
<td>138 (39.7%)</td>
<td>53 (15.2%)</td>
</tr>
<tr>
<td>Open Access journals</td>
<td>2.68</td>
<td>0.94</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>38 (10.9%)</td>
<td>111 (31.9%)</td>
<td>123 (35.3%)</td>
<td>76 (21.8%)</td>
</tr>
<tr>
<td>Open Access policies/mandates</td>
<td>1.85</td>
<td>0.92</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>153 (44.0%)</td>
<td>119 (34.2%)</td>
<td>52 (14.9%)</td>
<td>24 (6.9%)</td>
</tr>
<tr>
<td>Copyright on scientific production</td>
<td>2.07</td>
<td>0.93</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>110 (31.6%)</td>
<td>131 (37.6%)</td>
<td>78 (22.4%)</td>
<td>29 (8.3%)</td>
</tr>
<tr>
<td>International initiatives on OA</td>
<td>1.66</td>
<td>0.88</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>198 (56.9%)</td>
<td>86 (24.7%)</td>
<td>49 (14.1%)</td>
<td>15 (4.3%)</td>
</tr>
</tbody>
</table>

SD – Standard deviation; Mode in bold.

When asked about their knowledge of copyright (Figure 3), more than half of the respondents rated their knowledge as positive, but when asked about who owns the copyright of their scientific
production at the institution, more than half of the respondents did not know. As in the OER domain, and similar to other studies (Saraiva & Rodrigues, 2010; Creaser et al., 2010; Amante, 2012), there is still some confusion in the area of copyright and intellectual property, which in this area is also related to the fact that publishers do not clarify their copyright and open access policies, as abovementioned.

Concerning the practice of publishing scientific production, the most frequently used space is, as in the case of teaching materials, the institutional LMS Platform, but closely followed by Open Access Repositories and open access scientific journals. The frequency of publication is less than the frequency of searches, but still almost half of faculty Often or Always publishes in open access repositories and journals.

Table 6: Frequency of publication – scientific production

<table>
<thead>
<tr>
<th>Frequency of publication</th>
<th>Mean</th>
<th>SD</th>
<th>Never</th>
<th>Rarely</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Paid&quot; journals</td>
<td>2.20</td>
<td>0.90</td>
<td>81 (23.3%)</td>
<td>147 (42.2%)</td>
<td>89 (25.6%)</td>
<td>31 (8.9%)</td>
</tr>
<tr>
<td>Open Access journals</td>
<td>2.29</td>
<td>0.77</td>
<td>54 (15.5%)</td>
<td>151 (43.4%)</td>
<td>130 (37.4%)</td>
<td>13 (3.7%)</td>
</tr>
<tr>
<td>LMS (Moodle, Blackboard, etc.)</td>
<td>2.34</td>
<td>1.01</td>
<td>93 (26.7%)</td>
<td>90 (25.9%)</td>
<td>119 (34.2%)</td>
<td>46 (13.2%)</td>
</tr>
<tr>
<td>Personal website</td>
<td>1.57</td>
<td>0.81</td>
<td>207 (59.5%)</td>
<td>95 (27.3%)</td>
<td>33 (9.5%)</td>
<td>13 (3.7%)</td>
</tr>
<tr>
<td>Open Access institutional repository</td>
<td>2.31</td>
<td>0.93</td>
<td>79 (22.7%)</td>
<td>116 (33.3%)</td>
<td>118 (33.9%)</td>
<td>35 (10.1%)</td>
</tr>
<tr>
<td>Social networks (Facebook, Twitter, Google+, etc.)</td>
<td>1.58</td>
<td>0.77</td>
<td>197 (56.6%)</td>
<td>109 (31.3%)</td>
<td>33 (9.5%)</td>
<td>9 (2.6%)</td>
</tr>
<tr>
<td>Academic social networks (ResearchGate, Academia.edu, Mendeley, etc.)</td>
<td>2.18</td>
<td>0.96</td>
<td>104 (29.9%)</td>
<td>106 (30.5%)</td>
<td>109 (31.3%)</td>
<td>29 (8.3%)</td>
</tr>
</tbody>
</table>

SD – Standard deviation; Mode in bold.
With regard to barriers (Table 7), we found that, as in the case of Open Educational Resources, all the barriers presented also obtained their mode in the category “Important”. However, when analyzing the average of responses, it was possible to understand that respondents attributed a greater degree of importance to the lack of institutional support policies/strategies, lack of time and insufficient institutional support.

<table>
<thead>
<tr>
<th>Importance of barriers to Open Access</th>
<th>Mean</th>
<th>SD</th>
<th>Not important</th>
<th>Slightly important</th>
<th>No opinion</th>
<th>Important</th>
<th>Very important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insufficient technical support at institution</td>
<td>3.67</td>
<td>1.06</td>
<td>12 (3.4%)</td>
<td>53 (15.2%)</td>
<td>38 (10.9%)</td>
<td>179 (51.4%)</td>
<td>66 (19.0%)</td>
</tr>
<tr>
<td>Insufficient legal support at institution</td>
<td>3.64</td>
<td>1.08</td>
<td>11 (3.2%)</td>
<td>60 (17.2%)</td>
<td>42 (12.1%)</td>
<td>167 (48.0%)</td>
<td>68 (19.5%)</td>
</tr>
<tr>
<td>Lack of reward system to publish in OA</td>
<td>3.64</td>
<td>1.26</td>
<td>23 (6.6%)</td>
<td>62 (17.8%)</td>
<td>39 (11.2%)</td>
<td>119 (34.2%)</td>
<td>105 (30.2%)</td>
</tr>
<tr>
<td>Lack of time to publish in OA</td>
<td>3.70</td>
<td>1.25</td>
<td>24 (6.9%)</td>
<td>55 (15.8%)</td>
<td>29 (8.3%)</td>
<td>132 (37.9%)</td>
<td>108 (31.0%)</td>
</tr>
<tr>
<td>Lack of quality of OA publications</td>
<td>3.39</td>
<td>1.09</td>
<td>21 (6.0%)</td>
<td>67 (19.3%)</td>
<td>51 (14.7%)</td>
<td>174 (50.0%)</td>
<td>35 (10.1%)</td>
</tr>
<tr>
<td>Lack of hardware/software to use repositories</td>
<td>2.97</td>
<td>1.20</td>
<td>44 (12.6%)</td>
<td>97 (27.9%)</td>
<td>57 (16.4%)</td>
<td>125 (35.9%)</td>
<td>25 (7.2%)</td>
</tr>
<tr>
<td>Lack of skills to publish in OA</td>
<td>3.30</td>
<td>1.28</td>
<td>33 (9.5%)</td>
<td>85 (24.4%)</td>
<td>41 (11.8%)</td>
<td>123 (35.3%)</td>
<td>66 (19.0%)</td>
</tr>
<tr>
<td>Lack of interest in scientific innovation</td>
<td>3.12</td>
<td>1.36</td>
<td>57 (16.4%)</td>
<td>76 (21.8%)</td>
<td>40 (11.5%)</td>
<td>118 (33.9%)</td>
<td>57 (16.4%)</td>
</tr>
<tr>
<td>Lack of national/regional support policies</td>
<td>3.50</td>
<td>1.12</td>
<td>22 (6.3%)</td>
<td>56 (16.1%)</td>
<td>49 (14.1%)</td>
<td>168 (48.3%)</td>
<td>53 (15.2%)</td>
</tr>
<tr>
<td>Lack of institutional support strategies/policies</td>
<td>3.79</td>
<td>1.19</td>
<td>20 (5.7%)</td>
<td>41 (11.8%)</td>
<td>47 (13.5%)</td>
<td>123 (35.3%)</td>
<td>117 (33.6%)</td>
</tr>
<tr>
<td>Lack of knowledge on the mandatory caráter of institutional policies</td>
<td>3.57</td>
<td>1.11</td>
<td>18 (5.2%)</td>
<td>47 (13.5%)</td>
<td>70 (20.1%)</td>
<td>143 (41.1%)</td>
<td>70 (20.1%)</td>
</tr>
<tr>
<td>Lack of knowledge on publishers’ deposit policies</td>
<td>3.58</td>
<td>1.10</td>
<td>15 (4.3%)</td>
<td>52 (14.9%)</td>
<td>68 (19.5%)</td>
<td>143 (41.1%)</td>
<td>70 (20.1%)</td>
</tr>
<tr>
<td>Lack of interest in publishing in OA</td>
<td>3.44</td>
<td>1.29</td>
<td>40 (11.5%)</td>
<td>51 (14.7%)</td>
<td>48 (13.8%)</td>
<td>134 (38.5%)</td>
<td>75 (21.6%)</td>
</tr>
</tbody>
</table>

SD – Standard deviation; Mode in bold.

Data show there are still several important aspects to be clarified with regard to open access. The fact that the most valued barrier is linked to the lack of institutional support strategies, considering that most Portuguese institutions already have a policy or mandate related to open access, makes us conclude that there is some work to be done by the institutions in order to enforce compliance with these policies or mandates. Whether it is due to lack of knowledge of the existence of institutional
policy by faculty or by lack of monitoring of this policy at institutional level, the truth is that these institutional strategies for publishing open access research results must be promoted by institutions and properly understood and followed by faculty.

As in the case of barriers, almost all incentives (Table 8) obtained their mode in the “Important” category, with the exception of training/workshops items for researchers and projects funded to publish openly. The incentives considered by the respondents as more important were training/workshops, the existence of a quality assurance system for publications and, thirdly, three incentives: the existence of funded projects, legal support for publication and technical support for publication.

Table 8: Importance of incentives to Open Access

<table>
<thead>
<tr>
<th>Importance of incentives to Open Access</th>
<th>Mean</th>
<th>SD</th>
<th>Not important</th>
<th>Slightly important</th>
<th>No opinion</th>
<th>Important</th>
<th>Very important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical support to open Access publication/ deposit</td>
<td>4.00</td>
<td>1.05</td>
<td>23 (6.6%)</td>
<td>10 (2.9%)</td>
<td>25 (7.2%)</td>
<td>177 (50.9%)</td>
<td>113 (32.5%)</td>
</tr>
<tr>
<td>Legal support to open Access publication/ deposit (copyright issues)</td>
<td>4.00</td>
<td>1.06</td>
<td>23 (6.6%)</td>
<td>8 (2.3%)</td>
<td>33 (9.5%)</td>
<td>165 (47.4%)</td>
<td>119 (34.2%)</td>
</tr>
<tr>
<td>System of quality assurance of Open Access publications</td>
<td>4.02</td>
<td>1.12</td>
<td>30 (8.6%)</td>
<td>4 (1.1%)</td>
<td>21 (6.0%)</td>
<td>168 (48.3%)</td>
<td>125 (35.9%)</td>
</tr>
<tr>
<td>Existence of institutional OA repository</td>
<td>3.85</td>
<td>1.12</td>
<td>31 (8.9%)</td>
<td>4 (1.1%)</td>
<td>50 (14.4%)</td>
<td>164 (47.1%)</td>
<td>99 (28.4%)</td>
</tr>
<tr>
<td>Existence of national OA repository</td>
<td>3.80</td>
<td>1.13</td>
<td>31 (8.9%)</td>
<td>5 (1.4%)</td>
<td>62 (17.8%)</td>
<td>155 (44.5%)</td>
<td>95 (27.3%)</td>
</tr>
<tr>
<td>Existence of OA sharing community</td>
<td>3.74</td>
<td>1.11</td>
<td>30 (8.6%)</td>
<td>6 (1.7%)</td>
<td>71 (20.4%)</td>
<td>158 (45.4%)</td>
<td>83 (23.9%)</td>
</tr>
<tr>
<td>Training/workshops for researchers</td>
<td>4.07</td>
<td>1.17</td>
<td>26 (7.5%)</td>
<td>14 (4.0%)</td>
<td>28 (8.0%)</td>
<td>120 (34.5%)</td>
<td>160 (46.0%)</td>
</tr>
<tr>
<td>OA as mandatory requirement of research institutions</td>
<td>3.67</td>
<td>1.22</td>
<td>35 (10.1%)</td>
<td>19 (5.5%)</td>
<td>66 (19.0%)</td>
<td>134 (38.5%)</td>
<td>94 (27.0%)</td>
</tr>
<tr>
<td>Existence of funded projects to publish in OA</td>
<td>4.00</td>
<td>1.20</td>
<td>30 (8.6%)</td>
<td>12 (3.4%)</td>
<td>32 (9.2%)</td>
<td>128 (36.8%)</td>
<td>146 (42.0%)</td>
</tr>
<tr>
<td>Allocation of hours to publish in OA</td>
<td>3.73</td>
<td>1.16</td>
<td>27 (7.8%)</td>
<td>22 (6.3%)</td>
<td>66 (19.0%)</td>
<td>135 (38.8%)</td>
<td>98 (28.2%)</td>
</tr>
<tr>
<td>OA publishing as specific criterion in researchers’ evaluation</td>
<td>3.76</td>
<td>1.24</td>
<td>29 (8.3%)</td>
<td>35 (10.1%)</td>
<td>41 (11.8%)</td>
<td>128 (36.8%)</td>
<td>115 (33.0%)</td>
</tr>
<tr>
<td>Permission by publishers to deposit in institutional repositories</td>
<td>3.64</td>
<td>1.45</td>
<td>66 (19.0%)</td>
<td>9 (2.6%)</td>
<td>26 (7.5%)</td>
<td>132 (37.9%)</td>
<td>115 (33.0%)</td>
</tr>
<tr>
<td>Mandatory requirement by funders of research projects</td>
<td>3.55</td>
<td>1.41</td>
<td>65 (18.7%)</td>
<td>10 (2.9%)</td>
<td>37 (10.6%)</td>
<td>141 (40.5%)</td>
<td>95 (27.3%)</td>
</tr>
</tbody>
</table>

SD – Standard deviation; Mode in bold.
Concerning the **perceptions** towards making scientific production openly available, the perceptions that revealed the highest degree of agreement were clearly favorable perceptions, and the respondents valued more the aspects related to the visibility and impact of the research, the reputation of the institution and believing in the concept of Open access to scientific production.

We find that the respondents have a positive perception of Open Access, clearly identifying the advantages associated with it, and considering it, just as in Open Educational Resources, not only an added value for their research work, but also for the institution, thus corroborating the conclusions of previous studies (Saraiva & Rodrigues, 2010; Amante, 2012; Creaser et al., 2010). The results reveal a tendency of those who have favorable perceptions to creating and sharing OER to be also favorable to making scientific production openly available. This is very important for the current research, since not only does it allow us to conclude that both domains are significantly correlated, but also that there is a predisposition on the part of the teachers and researchers favorable to the movement of openness to knowledge, both in teaching and research activities.

**Final reflections, conclusions and recommendations**

Although there is an expected and necessary difference between Open Educational Resources and Open Access, results have shown that: (i) there is a general lack of knowledge in both fields; (ii) the types of barriers and incentives considered as most important are also convergent in both fields; and (iii) the perceptions are also similar for the two domains. Therefore, we believe the differences derive essentially from two aspects: first, they are two domains that have originated from two different movements, carried out by different stakeholders, until now not always with convergent objectives. And second, the recognition and consequent investment, at institutional level, of the research activity, to the detriment of the teaching activity, makes faculty themselves invest more time and effort in the research component.

Although we do not traditionally have a culture of sharing and the movements of Open Educational Resources and Open Access are at different levels of maturity, there is room for convergence. The perceptions and predisposition of faculty towards the values of collaboration, sharing and openness suggest that if there is an effort to clarify the aspects we have indicated as essential and to overcome the challenges also mentioned, it will be possible to move towards open educational practices, which benefit not only faculty themselves, but also their institutions and the global community.

One of the great arguments in favor of open access to scientific production has been the fact that, when research is funded with public resources, the results of such research must also be made public. Although this argument is not often found in literature, with regard to OER, the truth is that it can be applied to the resources that teachers produce in the scope of their functions when working at a public educational institution. This brings us back to Willinsky’s (2005) perspective, when he argues for the convergence between the different domains, stating that they all have a shared commitment to the principles of transparency, collaboration and greater openness to knowledge.

If there are signs of convergence between both domains, and considering that the Open Access movement is in a more advanced degree of maturity in Portugal, we suggest that institutions update their Open Access policies, in order to include clear indications regarding the teaching resources produced by their faculty.

Awareness-raising and clarification activities on copyright, open licenses, workshops and training for faculty should be promoted to encourage open teaching and research practices.

Finally, we reiterate the perspective of Conole and Alevizou (2010) and Veletsianos and Kimmons (2012), that openness is a trend, both in terms of producing and sharing educational resources, as well as increasingly open scientific publications.
It is now up to decision-makers to define a single policy agenda to monitor activity and follow up the progress in both domains simultaneously, aware that the movement of openness to knowledge promotes a more democratic and more competitive education system. In its essence, to educate is to share knowledge.

References


---

Papers are licensed under a Creative Commons Attribution 4.0 International License

*Open Praxis*, vol. 11 issue 1, January–March 2019, pp. 55–70
“I find the whole enterprise daunting”: Staff understanding of Open Education initiatives within a UK university

Sinead Harold

University of the West of England (United Kingdom)
sinead.harold@outlook.com

Vivien Rolfe

Independent open educator (United Kingdom)
vivien.rolfe@gmail.com

Abstract

“Open” initiatives, which focus on increasing access to education, resources, and research, are often practised by individuals rather than universities. However, universities must now produce openly accessible research to comply with research funding and assessment requirements. To encourage staff participation, universities need to understand what participation barriers their staff face.

67 University of the West of England staff were surveyed about how they understood and participated in open initiatives. Four staff gave qualitative interviews about their experiences. This data was analysed to find correlates for participation and to identify participation barriers. Participants valued open initiatives and supported their underlying goal of increased public access. Staff faced many entry barriers, especially around resource maintenance, copyright, and permissions. Universities could reduce these issues by emphasising how open initiatives allow staff to save time and to avoid reduplicating resources, and by creating unified “open policies” that make staff permissions and restrictions clearer.

Keywords: OER; open access publishing; open policy

Introduction

Openness and Open Education

An ecosystem of initiatives based on the principle of openness – the ability to freely create, share and build upon resources – is widely used across teaching, research, and science. The concept of Open Education currently "addresses all dimensions related to operational, legal and visionary aspects throughout the analysis, design, realization and evaluation of learning experiences to facilitate high-quality education meeting the given situation, needs and objectives" (Stracke, 2017).

As this study is based in a university, with participants who are researchers and educators, it focuses on the specific open initiatives used most commonly in research and teaching. These are:

- Open Educational Resources (OER) -- "teaching, learning and research materials in any medium, digital or otherwise, that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions." (UNESCO, 2012)
- Open licences -- "licences which grant permission to access, re-use and redistribute a work with few or no restrictions." (Open Knowledge Group, n.d)
- Open Access Publishing (OAP) / Open Access (OA) -- "free and unrestricted access to peer-reviewed literature." (Budapest Open Access Initiative, 2002)
Open Education initiatives allow researchers to use published data in new contexts (Piwowar & Vision, 2013); students and educators to customise teaching resources (de los Arcos, Farrow, Perryman & Weller, 2014); and universities to use OER textbooks that reduce student costs (Hilton, Robinson, Wiley & Ackerman, 2014). Individuals have many motivations for taking part in open initiatives, such as increasing awareness of their work and enhancing their teaching ability. Many people see openness and decreasing barriers to access as valuable to society (D’Antoni, 2009). In previous research on openness, individuals have reported various barriers to their participation in open initiatives. The same barriers often persist across initiatives and over time; they include a lack of information about initiatives, a lack of institutional support when taking part, and doubts about the technical and legal knowledge required to participate (OECD, 2007).

**Connected yet Isolated Initiatives**

Although Open Education initiatives have been described as a “diverse and unpredictable” range of activities (Farrow, 2016), they build upon and support each other. For example, Open Educational Practice (OEP) describes a movement beyond separate open content, resources and tools towards an infrastructure based on working and teaching openly by default (Schaffert & Geser, 2008). Despite the similarities between individual initiatives and the overall goals of OEP, studies have focussed on initiatives in isolation rather than on their potential connections. However, one recent study attempted to map the connections between current research topics and their shared predecessors (Weller, Jordan, DeVries & Rolfe, 2018). In this study, Open Education could be represented as eight sub-topics which barely overlapped.

Open initiatives are frequently underpinned by shared goals such as increasing access to resources, reducing barriers to education, and increasing people’s agency over information. Yet there is little research on whether people’s support for these shared goals links to their participation. It is also unclear whether individuals take an all-or-nothing approach to openness, or if they choose to take part in some open initiatives and reject others. As such, investigating if and how people connect different open initiatives could benefit openness research.

Cohesive research on how people understand open initiatives is limited for multiple reasons. The many ideas and terms involved in openness can make defining specific open initiatives complicated, and leave them with multiple competing definitions (Ross-Hellauer, 2016). Open initiatives have been developed over time by groups with different interests, creating conflicts about the meaning of openness and the necessary requirements for a work to be described as open. Hylén (2006) has summarised these conflicts, which include restrictions (which usage limitations prevent works from being open), price (whether open works must be zero-cost), and access (whether requiring people to provide information in order to access resources negates their openness).

Finally, open initiatives are often the responsibility of individuals rather than institutions. When the Organisation for Economic Co-Operation and Development investigated how people used OER, they were unable to study universities because so few universities responded to their survey (OECD, 2007). They concluded that university management did not respond because they were unaware of whether individual educators or researchers participated. These factors make studying how people understand individual initiatives difficult, which limits available knowledge about how people might connect multiple initiatives.
"I find the whole enterprise daunting": Staff understanding of Open Education initiatives within a UK university

**Mandated Openness and Plan S**

Open Access Publishing has been supported by the moral argument that research should be freely available because taxpayers often fund research projects (Suber, 2003). Currently, UK Research Councils require the researchers they fund to publish in OA journals (RCUK, 2013). The Research Excellence Framework (REF), which measures research quality, only covers OA articles as of 2014 (HEFCE, 2014). This means research must be OA to contribute towards the success of a university, which has made awareness of OAP essential for researchers.

In September 2018 the OAP initiative Plan S was announced to great support from national research organisations (cOAlition S, 2018). Plan S aims to ensure that all research published from 2020 onwards is immediately OA and that academic journals apply fair open licences to publications. For research staff, Plan S could initially create an administrative burden: when individuals prepare to publish a paper in a journal, they will need to be aware of how that journal funds and licences publications. In this context, learning how staff understand and evaluate OA is necessary to know how best to implement OA.

Because open initiatives are closely related ideas with shared fundamental goals, this increased awareness of OA and Plan S is likely to result in increased awareness of and use of other open initiatives such as open licences, Open Data, and Open Science. Understanding the barriers staff currently face when using open initiatives, and the factors that influence their participation, should help to make this essential future participation more accessible.

**Study Purpose**

We aimed to understand how these staff compared and contrasted multiple open initiatives, and how their use of open initiatives varied. Part of this included looking at their view of openness as a broader concept, such as whether they saw open initiatives as separate ideas or as related ideas with shared goals. We also aimed to explore which participation barriers staff experienced, to establish whether the known issues found in previous studies were still present or whether new barriers had developed.

**Method**

This study took place at the University of the West of England (UWE). The publicly accessible UWE repository contains >26,600 items, including articles, theses, and datasets, as of January 2019 (UWE, 2019). A UWE Technology Enhanced Learning plan encourages staff to use more open content and open initiatives by 2020 (UWE, 2016). However, no specific policies about openness are in place, beyond adherence to the REF. As such, the information gained from this study may benefit UWE and similar institutions by clarifying what guidance is required in future openness policies.

This study combined a specifically developed questionnaire with follow-up interviews. Interviews were used to gauge how participants felt about working openly and to better understand their opinions on open initiatives. Questionnaires about OER, OA, Open Data and other initiatives exist in previous research, but these measures focus on individual aspects of working openly. This study intended to understand how participants viewed multiple open initiatives, which existing measures could not sufficiently address. A custom measure enabled a wider range of questions that covered both specific open initiatives and general attitudes to openness.
Measure development

Existing questionnaires on faculty awareness and use of open initiatives were pooled then analysed to identify common themes and questions. Questionnaire topics included OER (Mishra, Sharma, Sharma, Singh & Thakur, 2016), open content (Reed, 2012), Open Textbooks (Bliss, Hilton, Wiley & Thanos, 2013), and OA (Tandi Lwoga & Questier, 2014). We removed duplicate questions and statements that were irrelevant to the research question or intended participants. A preliminary set of questions was chosen and then rewritten to present all questions in a consistent tone, as well as to provide a single clear definition of every initiative included. This study used the terms “open content” and “open resources” interchangeably to describe any content made as part of an open initiative.

The final measure contains 36 questions and is available under a Creative Commons licence (Harold, 2018a). A demographics section asked about participants’ age group, gender, academic department, role, and length of service. Participants were also asked about:

- Their understanding of six open initiatives including OER, OA, and Creative Commons licences.
- Their agreement with positive and negative statements about the value, importance, and usability of open content.
- Their confidence in creating, licensing, and sharing open content, and their understanding of copyright requirements.
- Their support for some of the principles which underlie openness, such as reducing barriers to resources, increasing access to education, and supporting learning outside of educational institutions.
- Their use of ten different open initiatives including OER, OAP, and research repositories.

Seven staff members acted as pilot participants. Their free-response answers indicated that they understood the survey questions and terminology used, so no changes to question structure were required. Due to the small number of pilots, statistical tests were run in SPSS after completing data collection. A Kaiser-Meyer-Olkin test of sampling adequacy returned a value of 0.729, while Bartlett’s measure of sphericity returned a significant result to p<0.001. Cronbach’s alpha also showed an acceptable result of α = 0.80, with subsection scores of 0.67- 0.93. As no individual questions dramatically affected reliability, no changes were made. These results indicated that the measure was internally consistent and suitable for further analysis (Field, 2005).

Principal Components Analysis

Principal components analysis was used to identify whether the measure reflected the five factors it was designed to score. A varimax rotation was used to generate the simplest available solution by maximising how many variables loaded on to only one factor (Abdi & Williams, 2010). This analysis generated a four-factor model, where only factors that contained five or more items with loadings above .50 were accepted (Costello & Osborne, 2005). The first three factors met Costello and Osborne’s criteria. Although the fourth factor contained only four items, we accepted the factor because all items loaded at > 0.5.

All questions about how participants understood open initiatives loaded onto the first factor alongside all questions about their confidence in using open resources. This factor represented individuals’ knowledge of both specific initiatives and how to participate in them, so this factor was named Understanding. The second factor contained nine of the ten questions about participation in open initiatives. This factor was labelled Activity. The third factor contained every statement which expressed positive views about the value, importance, and usability of open content, plus all questions about support for open principles.
such as increasing access to education. As this factor represented all support for open initiatives, it was named Positivity. The final factor contained all statements that expressed negative views about the value, importance, and usability of open content. This factor was labelled Negativity.

Overall, the measure clearly identified participants' knowledge of, attitude towards, and participation in open initiatives. However, the measure could not distinguish between participants’ general support for open initiatives and their agreement with the shared open principles, which prevented further investigation into their possible connection. Potential explanations for this finding are included in the discussion.

**Free-Response and Interview Question Development**

The measure included free-response questions so participants could elaborate on their previous experiences with, or concerns about, open initiatives. During data collection the first 30 survey responses were coded and analysed, to look for recurring themes and for any overlooked participation barriers. These responses were used to generate ten interview questions, which are available under a Creative Commons licence (Harold, 2018b). This approach ensured that the interview questions were maximally relevant to the interviewees, taking their different academic disciplines and varying levels of experience into account.

Four participants were interviewed between August 22nd - September 16th 2016, and all interviews were recorded and transcribed. After data collection had been completed, thematic analysis was carried out on the full set of survey and interview responses.

**Survey Results and Correlations**

67 participants fully completed the survey (21 male and 46 female). 33 respondents were lecturers or professors, and 15 were researchers. Other roles included PhD students (seven), technicians (three), and administrators (five). 22 respondents were based in the Department of Biological, Biomedical and Analytical Sciences, 19 in Health and Social Sciences, 18 in Nursing and Midwifery, and five in Allied Health Professions. Participant demographics were not correlated with any experimental variables, which matches previous research findings.

Table 1 shows descriptive statistics for the four identified factors of Understanding, Positivity, Negativity and Activity. Understanding scores averaged 24.76/34, which suggested that participants

<table>
<thead>
<tr>
<th></th>
<th>Understanding Score</th>
<th>Activity Score</th>
<th>Positivity Score</th>
<th>Negativity Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>N Valid</td>
<td>67</td>
<td>67</td>
<td>67</td>
<td>67</td>
</tr>
<tr>
<td>Missing</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mean</td>
<td>24.76</td>
<td>10.73</td>
<td>16.34</td>
<td>11.24</td>
</tr>
<tr>
<td>Median</td>
<td>24.00</td>
<td>9.00</td>
<td>15.00</td>
<td>11.00</td>
</tr>
<tr>
<td>Mode</td>
<td>23</td>
<td>8</td>
<td>14</td>
<td>11</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>3.234</td>
<td>5.367</td>
<td>5.324</td>
<td>2.487</td>
</tr>
<tr>
<td>Minimum</td>
<td>17</td>
<td>0</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Maximum</td>
<td>34</td>
<td>27</td>
<td>32</td>
<td>18</td>
</tr>
</tbody>
</table>

"I find the whole enterprise daunting": Staff understanding of Open Education initiatives within a UK university
already had knowledge of open initiatives beyond the information provided within UWE. Despite this, participants’ free-response comments indicated a desire for more information about open initiatives. Positivity scores clustered around the centre of potential values, with a mode of 14/32, which suggested that participants generally saw open initiatives as valuable and worthwhile.

However, their mean Negativity score of 11.24/18 indicated many difficulties and doubts about participating in open initiatives. Participants’ mean Activity score of 10.73/27 and modal score of 8/27 supported this view. Figure 1 represents how many participants had ever performed each activity, and shows how each activity was irrelevant to 10–20% of participants due to their varied roles. These results suggested that although participants generally believed open initiatives were valuable, they engaged with a fraction of the available initiatives. Understanding scores were positively correlated with Activity scores (r(67) = 0.319, p = 0.008), which indicated that people with greater conceptual and technical knowledge about open initiatives were more likely participate in them. Despite this, Positivity scores were negatively correlated with Activity scores (r(67) = -0.244, p = 0.047). Possible reasons for this unexpected finding are included in the discussion.

The most popular open activities were “creating open content to share with colleagues” (30 participants) and “creating open content to be shared online” (26 participants). The rarest activities were “uploading OER to be shared online” (seven participants) and “uploading results to an archive other than the UWE repository” (eight participants). 21 participants had uploaded material to the UWE repository, and eight had done so “most of the time”. Their preference for using the UWE repository over external ones matches a previous study in which staff participated in institution-focussed openness more than public-focussed openness (Rolfe, 2012).

17 participants shared OER with colleagues, while only seven had placed OER online. However, 34 participants said they would be likely to share open content online in future. Many participants

Figure 1: Staff participation in open initiatives.
doubted their technical skills. 35 participants stated, “I am not confident in my technical skill to create or share OER”. Licensing was another issue; 45 participants agreed, “It is hard to tell what different licences for content mean, in terms of how they can be used”. The prevailing barrier was copyright and ownership; 51 participants did not know who would own open content they created.

Free-Response and Interview Themes

Four themes were identified across the free-response answers and participant interviews. One question asked if participants had previously used any other open initiatives. Participants only mentioned topics that were already included in the measure –open science, OA, and Creative Commons licences– which indicated that no major initiatives were overlooked.

1) Not knowing where to begin with initiatives

Participants frequently spoke of “not knowing where to start” in two separate contexts. Firstly, they were often unsure of how to acquire information about open initiatives or best practices —“I don’t know how to go about understanding [open content] in the best way”. One participant discussed how the amount of terminology and initiatives impeded their understanding —“I find the whole enterprise daunting and the bureaucracy is putting me off”. We asked participations about their confidence in applying permissions to content they created. This question was met with multiple responses of “I’m not really sure what this means” and similar, which suggested that current guidance does not sufficiently explain licensing and permissions.

The second context was how participation in open initiatives interacted with copyright restrictions, intellectual property regulations (IPR), and UWE policy. One participant directly stated “I am restricted by UWE IPR”, while others had not participated in open initiatives because they did not know if they were permitted to —“I would be happy to do this but [it] depends on the restrictions set by the IPR contract”. Participants expressed fears of going against legal limits or existing policies —“I would want to make sure I didn’t breach any legal restrictions on repurposing material”. Similar conflicts applied to OA publishing; one participant said that OA “seems very complicated as there are many different levels. [I] do not wish to get in trouble with journals by putting papers online if not permitted.”

2) Responsibility, liability, and credit for content

Many participants, even those who strongly supported open initiatives, discussed the risk of plagiarism. Fears of plagiarism led some participants to keep resources solely within local networks —“outside of my organisation I would be concerned that work might get used and not credited”. A related concern was over attribution for created resources —“there needs to be a solid method of recognising the originator of the material”. Many participants wanted to receive credit for their efforts —“[I] would like users who re-use my stuff to acknowledge the source.”

Other participants focussed on the risks in releasing resources for wider use and on who held responsibility for resources after their release. Participants were wary of outdated or inaccurate information; some would only release resources “with the caveat that as soon as I release it they are responsible for keeping the information up to date”.

3) Control over which content is shared, and who it is shared with

Many participants viewed sharing content as a personal favour to individuals. Participants with this viewpoint only shared resources with known, trusted recipients, and modified their approach for
specific resources. “[Sharing] entirely depends on the nature of the material”. Other participants were reluctant to share resources in case others used their material without reciprocating, or stole their ideas —“I am comfortable to share as long as colleagues share back, otherwise it is one-sided and unfair”. Another issue was establishing control over materials. Multiple participants wished to have contracts or ownership agreements in place before releasing any created resources.

However, some participants focussed on the collective benefits of shared resources —“colleagues and I are continuously reinventing the wheel - having better systems for sharing [and] storing resources we have developed would make this easier.” Another participant saw the goal of education as more important than individual resources —“If I have already created something for one purpose, re-using it for another purpose to further educate people is appropriate.”

4) Lack of confidence or perceived ability

Participants often doubted their own ability to create high-quality materials. Most participants would only release their best material, rather than works-in-progress, while some doubted that any of their work could be useful —“I would need to be sure I knew exactly what I was doing first”. Although participants in previous studies saw their low confidence in their technical ability as a major barrier, this group viewed technical limitations as a secondary concern compared to their knowledge —“I don’t know how to do [open content] but learning how to use technology is just par for the course with everything we do”.

Interview Results

Four participants wished to give an in-person interview (two male and two female). All four described themselves as lecturers, with varying levels of research experience. One interviewee worked in the Department of Biological, Biomedical and Analytical Sciences, two in the Department of Health and Social Sciences, and one in Nursing and Midwifery. Two interviewees had extensive experience with open initiatives, while two were tentatively familiar with openness. This variety of perspectives and expertise meant the interviewees could offer views on a range of topics beyond the limits of the questionnaire, especially around legal nuances, copyright, and licensing.

Participants discussed the balances they maintained when working openly, such as how they dealt with the risks of data being misinterpreted or misused. They were unsure of where the burden of responsibility for data fell. Interviewee #2 asked, “that’s beyond your control but is it your responsibility?” Interviewee #4 argued similarly, saying —“there’s a balance between being free about what you do with [data], and keeping mechanisms of control to protect the end user who may not have the knowledge to make decisions with [that data] themselves.” In a similar study involving American university staff (Belikov & Bodily, 2016), participants struggled to extract high-quality resources from the sea of information available to them. This cohort experienced the same issue, which Interviewee #2 concisely summarised as “there’s a lot of good material out there, I just don’t know how to use it”.

One interview question asked what hypothetical change participants would make to reduce barriers to using open initiatives. Interviewee #1 focussed on information availability: they would improve standardisation and metadata to make resources more accessible and easier to find. Interviewee #4 focussed on information awareness: they would add information awareness and management to the National Curriculum to increase people’s understanding of access, copyright, and sharing resources. Both ideas —metadata and infrastructure, and information awareness— closely link to existing barriers such as discovering resources and using information confidently.
Interviewee #2 distinguished between intentionally open resources and resources acquired by circumventing access restrictions. Their choice was to legalise academic paywall-bypassing website Sci-Hub to increase research access, as Sci-Hub enables access to vast amounts of research using a quicker and often simpler process than official channels. Access data released by Sci-Hub supported their viewpoint; most Sci-Hub users were based in university campuses and so already had institutional access to many of the papers they downloaded (Bohannon, 2016; Bohannon & Elbakyan, 2016). This argument, and its supporting data, demonstrates the importance of speed and simplicity in decisions about using resources. It suggests that for open initiatives to succeed, working openly must be simpler than remaining closed.

**Discussion**

This study asked university staff about their perceptions of various open initiatives, and about their previous experiences with working openly, to understand which factors blocked staff from participating in open initiatives. We expected staff to experience many of the same participation barriers faced by participants in previous studies. In one previous study, participants’ support for principles of openness, such as increased access to education, encouraged them to participate in OER. Based on the many similarities between open initiatives, this connection is likely to apply to the current participants.

Overall, participants did not express any ideological barriers towards participation in open initiatives. They instead faced the same barriers found in previous studies, which centred on practical concerns such as policy and guidance, organisational support, and personal skills or confidence. These findings emphasised that participation barriers often apply to multiple initiatives and time periods, rather than being unique to specific initiatives or institutions. Participants uniformly supported the included open principles. However, their unanimity might have been influenced by the questionnaire: because fewer questions discussed principles, the questionnaire may have provided less room for nuanced opinions.

In this study, staff understanding and participation were associated: the most knowledgeable participants were more likely to engage in open initiatives. In contrast, their level of positivity towards open initiatives was negatively correlated with their participation. As this negative association was identified after data collection had finished, we could not gain further clarification from participants. One explanation for this association could have been naivety – people who had never used open initiatives may have held unrealistically high expectations of them, while experienced users may have developed less optimistic expectations. Another explanation could have been burnout – people with extensive experience of open initiatives may have become less positive over time after experiencing barriers to initiatives or negative experiences with initiatives. Based on this group’s survey and interview responses, the naivety argument did not seem appropriate and the burnout argument had limited support.

**Participant Variety and STEM-Focus**

While we surveyed participants of diverse ages, job roles, and service lengths, postgraduate researchers were under-represented. In a previous study on Open Science participation, principal investigators discussed how their postgraduate researchers experienced both great pressure to publish results and strict limits on their ability to work openly (Levin, Leonelli, Weckowska, Castle & Dupré, 2016). Future research should look more deeply into the unique experiences of postgraduate researchers. Participants in that study also explained how restrictive IPR block researchers from sharing material from industry-linked studies, and how researchers in competitive...
fields could feel pressured to hide their data so other researchers did not overtake them. In this context, researchers felt torn between working openly to benefit their community and limiting openness to protect their career.

Industry-backed studies and competitive fields are prominent issues within scientific research, and open initiatives often focus on science subjects. However, resources can often discuss openness solely in terms of science, such as by framing open access as "access to scientific knowledge" (European University Association, 2014). The taxpayer argument for OA also centres on scientific and medical research while excluding other disciplines (Suber, 2004). As a result, staff from other disciplines may view openness as a purely scientific concern and so may see different costs and benefits in openness. Interviewee #3, who worked in a humanities subject, saw their ability to participate in open initiatives as limited because initiatives often focussed on research methods or arguments that were irrelevant to them. Future studies need to include staff from diverse academic discipline to obtain as many viewpoints as possible.

**Open Educational Practice Policies**

Four study participants achieved the maximum Understanding score of 18, suggesting that few staff within UWE possess an extensive knowledge of openness. Two interview participants were experienced users of open initiatives who proactively applied open approaches to their work, published work openly, and informally supported their colleagues. However, most staff were unsure of how to begin using open initiatives. Participants who lacked experience in working openly expressed confusion about the definitions and scope of open initiatives: they did not know where to start learning nor who to seek advice from. The variety of concepts and terminology involved in open initiatives could block people’s early attempts to participate, as could their concerns about openness conflicting with copyright and IPR.

Based on this cohort’s experiences, relying on experienced staff alone cannot effectively transfer knowledge within a university. Top-down guidance is needed, preferably in the form of guides or policies that clearly define open initiatives and lay out ways for staff to begin using open initiatives in their roles. Policies could also help to dispel concerns around plagiarism and data misuse, by explaining which types of adaptation and reuse are permitted within an institution.

Overarching Open Educational Practice policies, which contain ground rules for creating, storing, and sharing open resources, may help universities communicate about openness more effectively. Although developing overarching policies requires a significant time investment, policies can pre-emptively explain how to approach different types of resources. This can reduce the burden of resources created within complex situations, such as interdisciplinary resources, mixed-media resources, or publications with multiple authors. OEP policies could also reduce potential conflicts with copyright and intellectual property by clearly defining which works and adaptations are permitted. However, as OEP is a recent development compared to other open initiatives, and is not widely used, little research on the consequences of adopting OEP exists. In one group of educators, this lack of available research was itself a barrier to adopting OEP (Cronin, 2017). Future studies would need to pilot and evaluate OEP projects to assess their potential value.

Institutions wishing to create policies or mandates about openness would also need to evaluate how they explain that policy, to ensure all staff groups were aware of how that policy applies to them. OER use requires both lecturer and student involvement, while widespread OA use requires support from library and IT staff; library staff for journal acquisition and research data management, and IT staff for technical infrastructure. One study that compared librarians and researchers in the same universities (Creaser, 2010) revealed a clear communication gap between librarians and researchers.
While 23% of surveyed universities had an OA policy, 75% of researchers from those universities were unaware of any policy. 17% of researchers from the universities without policies assumed a policy existed, while 11% of researchers wrongly believed their university had a policy. In another university that surveyed staff six months after they were first permitted to upload their publications to preprint archives or a personal website, only 25% of staff knew about this change (Xia et al., 2012).

Subsequent studies would gather better information about creating an effective OEP policy by involving academic, library and IT staff. A similar study to this one looked at how academic librarians use and understand open access (Suri, 2018). Most of the surveyed librarians promoted OA and supported others in using OA, but did so sporadically. They often had limited knowledge of OA policies and mandates, which was possibly due to how universities assigned responsibility for engagement in OA.

**Conclusion**

Although participants strongly supported open initiatives, they faced a range of practical barriers across three main areas; personal skills and confidence, policy and guidance, and organisational support. The barriers discussed in this study had previously been identified in earlier research across multiple open initiatives, and no barriers were unique to this cohort.

Based on the similarities between open initiatives, institutions could make working openly easier for staff by focusing on specific practical ways of framing discussions about open initiatives. Demonstrating the simplicity and speed of accessing open content would encourage the staff who prioritise access to required resources. Emphasising the overall concept of Open Educational Practice and the goals of openness, rather than talking about individual initiatives as separate projects, would make openness more accessible and less daunting to novice staff. Finally, explaining the shared values of open initiatives, and explicitly connecting those values to existing policies and resources, would help to dispel misconceptions about open initiatives.

Overarching OEP policies could effectively demonstrate this unified approach and reduce the cognitive and administrative burden of participation in open initiatives. However, this potential solution requires further research on how to effectively implement and communicate about OEP policies. Studies on openness also need to involve staff from more diverse career levels, and a wider range of academic and non-academic departments, to ensure future policies reflect the varied needs and limitations experienced by university staff.

**References**


Reed, P. (2012). Awareness, attitudes and participation of teaching staff towards the open content movement in one university. *Research In Learning Technology, 20*. http://dx.doi.org/10.3402/rlt.v20i0.18520


Papers are licensed under a Creative Commons Attribution 4.0 International License

But What Do The Students Think: Results of the CUNY Cross-Campus Zero-Textbook Cost Student Survey

Shawna Brandle
*Kingsborough Community College (USA)*
shawna.brandle@kbcc.cuny.edu

Stacy Katz
*Lehman College (USA)*
STACY.KATZ@lehman.cuny.edu

Anne Hays
*College of Staten Island (USA)*
Anne.Hays@csi.cuny.edu

Amy Beth
*Guttman Community College (USA)*
Amy.Beth@guttman.cuny.edu

Cailean Cooney
*New York City College of Technology (USA)*
CCooney@citytech.cuny.edu

Jacqueline DiSanto & Linda Miles
*Hostos Community College (USA)*
JDISANTO@hostos.cuny.edu & LMILES@hostos.cuny.edu

Abigail Morrison
*CUNY School of Professional Studies (USA)*
Abigail.Morrison@cuny.edu

Abstract

The results of the first cross-campus survey of student opinions on Zero Textbook Cost (ZTC) courses are in: City University of New York (CUNY) students like their ZTC courses, primarily for the cost savings and ease of access. The survey results yield rich data about how positively students feel about their Zero Textbook Cost (ZTC) courses as well as ways to improve the design and delivery of Zero Textbook Cost courses to make them more beneficial for student learning.

Keywords: OER; textbooks; student opinions

“Compared to all the other courses I have taken this semester and my entire college career, this class was the least stressful financially. I was able to focus on the class without worrying about being able to buy a textbook or only having access to material at the campus library reserves section.” - CUNY Student
Introduction

The promise of Open Educational Resources’ (OER) pedagogical and cost benefits align directly with City University of New York’s (CUNY) mission:

“as a vehicle for the upward mobility of the disadvantaged in the City of New York … [to] remain responsive to the needs of its urban setting … [while ensuring] equal access and opportunity to students, faculty and staff from all ethnic and racial groups and without regard to gender” (CUNY, 2018b).

Many CUNY undergraduate students qualify for financial aid: 54% are Pell Grant recipients, 37.1% have household incomes of less than $20,000 per year (in one of the most expensive markets in the country), and 26.7% of CUNY undergraduate students work over 20 hours per week to support their family’s income. The undergraduate student population is 32.3% Hispanic, 25.6% black, 21.1% Asian/Pacific Islander, and 20.7% white (CUNY Office of Institutional Research and Assessment, 2017).

In April of 2017 New York State Governor Andrew Cuomo announced $8 million in funding for Open Educational Resources (OER) adoption across CUNY and State University of New York (SUNY) systems (in response to funding requests from librarians at both institutions). From these funds, CUNY was able to support programs for OER adoption at varying levels across all 24 campuses during the 2017–18 academic year. Funding was awarded to faculty to convert their courses to OER, with an emphasis on large-scale adoption across high enrollment general-education courses. Funding was also available to incentivize section instructors to adopt the OER courses created by awardees; CUNY’s strong legacy and emphasis on academic freedom gave faculty the choice to opt-in or not. OER were adopted in 2,800 new course sections, impacting 76,000 students and resulting in $9.5 million saved on textbooks (CUNY, 2018c). Since savings from OER grow over time and the second year of funding will expand the OER initiative, by spring 2019 the initiative is projected to impact 260,000 students for a total savings of $28 million (New York State, Office of the Governor, 2018).

While the return on New York State’s investment is clearly significant in terms of cost savings, we wanted to learn how students felt about these new course materials. These cross-campus survey results yield rich data about how positively students feel about their Zero Textbook Cost (ZTC) courses and insights on how to improve the design and delivery of Zero Textbook Cost courses based on student feedback.

Literature Review

Open Educational Resources (OER) can benefit students in myriad ways, some of which include eliminating the cost of the textbook, ensuring earlier access to course materials and enabling students to engage with course materials when and where they choose. The high cost of textbooks can be an impediment to academic success, especially among students with pressing economic concerns (Broton & Goldrick-Rab, 2016; Colvard, Watson & Park, 2018). Students from low-income families experience food and housing insecurity and have difficulty paying their bills. In a broadly cited survey of 22,000 public college and university students in Florida, 66.6% of students report not purchasing the required textbook for the course (Florida Virtual Campus, 2016). In another survey (n = 3115), students at Brigham Young University indicated that they would spend money saved from not purchasing a textbook on housing (28.86%) and food (28.32%) (Martin, Belikov,
Hilton, Wiley & Fisher, 2017). Students report that they have delayed or decided against making a textbook purchase despite anxiety over how that choice might negatively affect their course grade (Senack, 2014; Hilton, 2016; Martin et al., 2017; Stein, Hart, Keaney & White, 2017; Jhangiani & Jhangiani, 2017).

Beyond eliminating the cost of the textbook, OER materials are free and available on the first day of class and then continuously accessible at any time. First-day access to required course materials is extremely important to student learning. Research shows that when students have first-day access they do much better in a course, and when they have to wait (for a book to be delivered online, or for a financial aid check or book voucher to be processed) to access materials, they do not do as well in the course (Agnihotri, Essa & Baker, 2017). The Open University found that educators consider cost and access as critical factors influencing student retention (de los Arcos et al., 2014).

Relevant research has been done on student experience of OER, such as Cooney (2017), which found Health Psychology students at New York City College of Technology (one of CUNY’s senior colleges) held positive opinions of the access afforded by and the quality of OER, but large-scale, cross-campus analysis has yet to be performed. The access to course materials that OER provides is particularly important for students who are commuters, which most CUNY students are. Regalado and Smale’s (2015) research indicates that CUNY students spend 30-60 minutes each way commuting to school, meaning they likely spend “considerably more than the average length reported by NSSE of five hours per week” in transit to school. Students interviewed by Cooney also relayed that access to portable course materials is of crucial import for urban students, juggling multiple responsibilities, including long commutes (Cooney, 2017, p. 175).

The Hewlett Foundation defines OER as “teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and re-purposing by others” (Hewlett Foundation, 2018). As such, OER does not have a standard look or feel that might be easily compared. Furthermore, an evaluation of Oregon’s OER designation requirement revealed that students do not understand the terminology of OER and have a low awareness of OER offerings at their institution (Freed, Friedman, Lawlis & Stapleton, 2018). No consensus exists nationally regarding how to designate zero textbook cost sections. The recommendation from Freed et al. (2018) is to use a simple phrase that is easy to understand. The phrase “Zero Textbook Cost” is used as a course registration designation across CUNY through the CUNYFirst student information system for course registration. The guidelines developed by CUNY define Zero Textbook Cost course sections as “those that do not require students to purchase a textbook” (CUNY, 2018a). Instructions describe the requirements for ZTC courses and the procedures faculty should follow to have their courses indicated as ZTC via the Registrar’s Office and the Bookstore. At CUNY, a ZTC course may include OER materials, as well as library materials or materials provided for free within copyright by the instructor, or simply be a course that does not have a textbook assigned. For the purposes of this survey and in this article, ZTC is the nomenclature used since it is both more easily understood by students and a more accurate reflection of the diverse materials used by CUNY ZTC course instructors.

**Methodology**

We created this survey for several reasons—to compare previous research done by other large scale university systems on student opinions of OER with student opinions at CUNY, and to draw out more specific answers to questions that relate to our local student population, as well as to
the questions CUNY faculty ask about OER. In the first case, we want to be able to see whether studies done (for instance) at Florida public institutions also relate to our students’ needs in an urban public university system in New York City; in the second instance we wanted to focus on the specific needs and experiences of CUNY students –how do they feel about learning with digital materials in general and in their ZTC courses, more specifically? Exactly how and with what technology do they access their ZTC course materials and where do they do so? What do they like and dislike about their ZTC courses? To get a closer look at students’ true opinions of these courses, we offered several open-ended questions on the survey. The Creative Commons-licensed CUNY ZTC Student Experience Survey (Brandle et al., 2018) we developed was adapted from a previously administered survey conducted by Jean Amaral at CUNY’s Borough of Manhattan Community College, and has been IRB approved for use across all CUNY campuses; the IRB also approved an open-data protocol for sharing the results. The complete survey is available in Appendix 1.

The survey was administered at the end of the Spring 2018 semester. A link to the survey was circulated to the OER coordinators at each campus via a listserv, requesting that they forward the survey invitation to faculty teaching ZTC sections, who could then invite students to participate in the anonymous survey. 898 responses were received from 14 different CUNY campuses. Six of the responses collected indicated “no” to the age and consent question, so they were discarded without analysis. Two responses answered only the campus question, leaving all other questions blank, so they were also discarded, leaving a total \( n \) of 890.

In the five cases where “institution name” was not supplied by a student respondent, the instructor name that was supplied was used to infer the institution at which the course was taken. Students’ responses were used to code a harmonized “course name” entry and a general subject area entry to facilitate data analysis. The general subject areas were Arts, Business, Education, Foreign Language, Interdisciplinary Studies, Library Studies, Humanities, Social Sciences, and STEM (Science, Technology, Engineering, and Math). In three cases where no course name was provided but faculty name was, the subject was coded based on the faculty name. There were ten cases in which no identifying information for course name or instructor name were supplied; these were coded as blank for the subject. In three cases, a student supplied the name and instructor of a course but chose the wrong campus from the drop-down menu, so the campus was corrected to match the course name and instructor the student supplied.

Three hundred and thirty-two (37.3%) responses are from students enrolled in ZTC courses at CUNY community colleges, 481(54%) are from traditional four-year colleges (some of which provide graduate level programs as well), and 77 (8.65%) represent coursework at the CUNY School of Professional Studies. The majority of responses (79%) are from students whose ZTC course was conducted entirely face-to-face, while 11% of responses come from students in hybrid (partially online and partially face-to-face) courses, and 9% of responses came from students in wholly online courses.

**Results and Discussion**

**Early and Convenient Access to ZTC Materials**

When asked when they first accessed the textbook and other materials for their ZTC course, 90% of respondents indicated they accessed materials either before the semester started (20%) or during the first week of classes (70%), as shown in Figure 1. 7% of respondents reported they never accessed their assigned ZTC materials during the course.
But What Do The Students Think: Results of the CUNY Cross-Campus Zero-Textbook Cost Student Survey

Figure 1: First Access of ZTC Materials

Not only did most students access the materials for the course early on, when asked to compare their ZTC class with most other classes they have taken, an overwhelming majority found the materials for their ZTC class easier to access than materials for prior courses, as shown in Figure 2. Of 887 responses to this question, 76% rated their ZTC materials easier to access, with an additional 21% saying they were about the same as accessing materials from most of their previous courses. Only 3% said the ZTC materials were more difficult to access than their previous materials. If we compare these results with the 2016 Florida Virtual Campus study, where 66.6% of students reported never having purchased their textbooks at all, this level of engagement is impressively high. Additionally, the 20% of students accessing their course materials before the semester begins demonstrates to CUNY faculty that our students wish to be proactively engaged with their learning materials.

Figure 2: Student Opinions on Ease of Accessing ZTC Materials, Compared to Other Courses

Students were also given the option to expand on their answer to the question of ease of access if they wished to do so. Their responses were coded for common themes. Of the 188 students who offered an explanation for why they found their ZTC materials easier to access, the most frequent explanation (76 students, or 40%) was convenience and the overall ease of access for ZTC materials.
Students appreciate being able to access their ZTC materials anywhere, from any device, at any time, as this student points out:

*I could see the course material pretty much anywhere I went, unless I was underground on the subway. I forget everything so I usually forget textbooks, but millennials these days NEVER forget their phones. So I always had my art history readings right in my front pocket!*

Forty-three students (23% of respondents on this open-ended question) said their ZTC materials were easier to access because all of the materials were online and/or on Blackboard, while 25 students listed cost as the primary explanation for why they found their ZTC course easier to access. The 3% of students who responded that the materials were more difficult to access gave answers to the open-ended question reporting difficulty with their logins, materials that were slow to load, or a preference for a physical copy.

65% of respondents indicated they did all of the required reading/viewing (including texts, videos, podcasts, etc.) for their ZTC courses. Thirty-two percent said they did some of the required reading/viewing, and only 2.5% said they did none. Taken together, these results clearly show that when students have convenient, easy, cost-free access to their learning materials, they are likely to do more of their assigned reading and viewing work for their courses.

Where Students Accessed Course Materials

We asked students where they accessed ZTC materials and on what devices. Their responses are summarized in Figure 3; 48% of respondents indicated three or more locations while 30% of students reported using only one location. While almost all students, 823 of 890 (92.5%), responded that they did their work at home, there were 1684 responses characterizing ZTC coursework in other places, including 267 responses about doing their schoolwork in transit, on a train or bus. Two hundred and eighteen students reported doing their ZTC course reading, writing, and studying while at their job. Many students reported doing their work somewhere on campus, either in the library (413), in a campus study room (207), in a computer lab on campus (190) or in a common space on campus (200). One hundred sixty five students said they did their work in a public place off campus, such as
a Starbucks or McDonalds. This evidence of CUNY students’ mobility and habit of studying on the go is consistent with previous research, and highlights the need for ZTC materials to be portable and mobile-device optimized.

**Technology Students Use to Access ZTC Materials**

When we combine the results of the location question above (where did you access materials?) with a question asking what technology students used for ZTC access, we find even more evidence about the need for mobility and optimization for delivery across multiple devices. All 890 respondents provided at least one answer to the question, “What technology did you mostly use to access the course materials (readings, textbook, videos, etc.) for this course?” and 66% of responders gave 2 or more answers for what technology they primarily used. Figure 4 shows the 2058 responses students gave to the question.

Students most often reported accessing course materials on their own computers, followed by their phone, and then library computers. These results are consistent with the findings of Smale, Regalado and Amaral (2018), who found that while most students owned smartphones and used them for some of their online and hybrid coursework, they largely relied on their home and campus computers for primary access. They summarized their study respondents’ opinion as “It was clear they considered a smartphone to be insufficient as the sole device for their academic work” (p.8), which is also a fair summary of the present study’s findings. Knowing how and where students access their ZTC materials provides useful data for those allocating infrastructure and tech fee budgets, as well as those designing course materials and/or selecting platforms for delivery.

**Digital Learning**

While the literature is divided regarding the effectiveness of learning from reading on paper vs. reading electronically (Niccoli, 2015), those who are skeptical about OER frequently express concern that OER means students will exclusively learn with digital materials (Green, 2016). We asked students to rate their own learning with digital materials and print materials. We phrased this question very
intentionally to ask students whether they felt they learned as well with digital materials, rather than with OER or ZTC materials, partly because this question speaks directly to questions teaching faculty tend to ask when considering OER, and partly because even in their traditionally-published textbook courses, students frequently turn to digital versions as the cheapest means of obtaining required books. A majority of respondents, 66%, said they feel they learn as well with digital materials as they do with print. Seventeen percent were not sure, and 17% of students reported that they do not learn as well with digital materials.

**Printing**

Students were asked to report how much of their ZTC materials they printed. This survey item was chosen to solicit additional student feedback on digital and analog methods of accessing the course materials, and is a relevant question addressing faculty concerns about the efficacy of learning with digital versus traditional print resources. While OER licensing permits printing and utilizing materials in formats other than electronic, students do not always have access to a printer and are not always aware that they can print the materials; some OER materials are not printable at all, such as video and audio content. Fifteen percent of respondents reported printing all of their ZTC materials, 43% printed some of their ZTC materials, and 41% of respondents printed none. Respondents who chose to print selected from multiple-choice options to indicate that they primarily wanted to take notes on the page and also that they prefer reading on paper. Even though many students appreciate the convenience and ease of digital materials, student motivations for printing tend to be nuanced and context-specific.

![Figure 5: If Students Printed Materials, What Were Their Reasons for Printing?](image)

While 41% of students reported printing none of their readings, 43% reported printing some with 15% saying they printed all of their assigned readings for their ZTC course. Students were asked to select as many reasons as they liked for why they printed their ZTC materials, which are summarized in Figure 5. There are important insights to draw from students’ reasons for printing. The top choice at 353 responses is “I wanted to take notes on the page,” with “I prefer reading on paper” a close second at 322 responses. Since skills and tools for reading and annotating online and digital texts exist in a variety of formats, there is an opportunity to improve student learning by
expanding faculty support for reading in digital spaces and exploring supporting technology including digital annotation tools.

**Student Perceptions of ZTC Courses: Benefits**

To understand student perspectives on their ZTC courses, we asked two open-ended questions to elicit feedback about the benefits and drawbacks of the open/free materials used in their course. Among the benefits, ease of access was clearly a major recurring theme in students' feedback. To provide better context about students' perceived benefits, each response was coded for one theme. Saving money and ease of access were the overwhelmingly dominant responses, as indicated in Figure 6.

![Figure 6: Themes from Open-Ended Answers on the Benefits of ZTC](image-url)

The majority of respondents (55%) expressed cost savings as a benefit, followed by 27% for ease of access. Representative comments include, “I had access to them whenever I needed them” and “I was able to access the materials any where [sic] I wanted. If I wasn’t home, I was still able to access the materials and do the work I needed to. I was not limited to a textbook and did not have to take the textbook everywhere I went in order to do my work.”

Students utilized the advantages of digital resources, such as the ability to electronically search their materials. Some noted the searchability of the materials as well as the ease of finding definitions of unknown words. These affordances can have positive implications with student populations, and is a significant benefit to students for whom English is not their primary language.

Improved pedagogy was another theme in the open-ended responses about benefits. As one student wrote, “I believe the benefits for having open materials for this course was that I felt the teacher was more engaged with what I was learning and attentive to understanding the written material given to us as students.”

In reviewing the responses to open-ended questions, the issue of stress came up consistently. When asked what the benefits of their ZTC course was, one student said “Less Stress. Much, Much Less Stress. Trust me I can tell I’m in college. I’m always stressed”, and another echoed the sentiment, “With various things in college that can stress you out from relationships to school work, having open/free materials helps mitigate it.” A third student pointed out both the lack of stress and the benefit of being able to retain their learning materials even after the end of the course, stating, “less stress and I now have it forever.”

Several respondents also mentioned the lowered environmental impact of their ZTC courses, as in “Saving money, saving paper,” “Save papers, reduce the weight we carry daily, able to do anything
that we want to the content," "It save [sic] money and save paper," and "The better for the environment and cheap."

**Student Perceptions of ZTC Courses: Drawbacks**

We also asked students to tell us about the drawbacks of their ZTC courses, but in their comments answering this question, approximately half of students responded that there were no drawbacks to the use of ZTC in their course. The other half of students questioned the quality of materials and mentioned their difficulties with the Internet or accessing their course materials, as well as paper and printing concerns, which they also associated with highlighting and note-taking practices. The responses on quality of materials included a wide range of criticism that might be found on any end-of-course evaluation, such as a lack of student-teacher contact, that readings were primarily journal articles and did not provide a more textbook-like overview, or the perennial "too much reading."

Mirroring some findings from the multiple choice survey questions, a fairly large percentage of drawbacks mentioned (27%) were related to the lack of print materials, as in "I don't like studying off of a computer," "I like more printed materials," and "I prefer physical copies." Students also noted challenges of highlighting, annotating, and note-taking digital learning materials; this subset accounts for 5% of the 304 actual drawback responses. The nine responses that mentioned eye strain from reading digital materials as a drawback of their ZTC course can be seen as related to the print-related criticisms as well, though they were coded separately. Issues with the technology, devices, or Internet connection required to access ZTC materials accounted for some drawbacks, such as "if there was no Internet access, it was difficult to learn the information" or "if you have no wifi it would be hard to get work done on time."

Notably, only about a third of the students who took the survey mentioned any kind of drawback to the course at all. This is not surprising, perhaps, given that when students asked if they would recommend a course using zero-cost materials to other students, almost all respondents--95% of 883 responses--said that they would, and only 47 respondents said they would not. Respondents were able to provide an explanation if they wished, and 480 respondents provided an explanation for why they would recommend a ZTC course; these explanations were coded for common themes, which are summarized in Figure 7.

![Figure 7: Reasons Given by Students for Recommending a ZTC Course](image)

Sixty percent of responses regarding why students would recommend their ZTC course to a friend focused on the cost savings, the high cost of textbooks, or the financial pressures faced by students.
Further echoing comments related to benefits of ZTC courses, 23% of responses mentioned the convenience of accessing their course materials from wherever they were as the reason for positive recommendations to friends, and 11% said their positive recommendation would be based on the ZTC materials being good for learning. One student’s response highlighted the benefits of their ZTC materials for students with disabilities:

_The material is easier to read it being online or on your phone you can zoom in and out making the letters and print bigger to see. Which is awesome for me because I have vision problems and cannot see tiny prints if they were to be on a regular book or printed out. I can make it the size I am comfortable with reading and do not have to strain my eyes more._

This student saw the flexibility provided by digital materials as a major benefit, because it allowed them to manage their learning in the way that was best for them, without having to disclose their need to a professor or disability services office.

Only 47 respondents of 883 said they would not recommend their ZTC course to friends.

**Study Limitations**

**Length of Time**

At the time of writing this paper, the survey had run for only one semester, the first full semester of participation in the Open Educational Resources (OER) Initiative. The team will continue collecting results from the survey for an additional 2.5 years, as per IRB approval. During that time, we expect the results to remain largely static, but additional research will be done to see if this prediction bears out. The open-data set will be updated at the end of each future semester that the survey runs.

**Inconsistent Faculty Participation**

As described, the survey was distributed only to students enrolled in the OER course sections associated with the OER grant. Rather than distributing the survey through a faculty blast, or another non-specific distribution method, the researchers sent the survey to OER coordinators at each campus, who distributed the survey to the faculty course designers and section instructors involved in the grant, who then shared it with students. This delivery method was logistically feasible for a survey on such a large scale, and allowed us to increase the likelihood that only students who had actually taken a ZTC course would take the survey, but it did mean that we depended on faculty to offer the survey, which they may or may not have done. Future plans for distribution include face-to-face survey tables in libraries, and more collaboration with faculty stakeholders across the CUNY system.

**Sample Size**

This study was implemented with a convenience sample, though in this case purposefully so. The population was intentionally limited to students enrolled in OER courses associated with the OER grant so that we could study the targeted effects of the grant and how using OER materials instead of commercial materials affected our students’ experience. The issues regarding inconsistent faculty participation created a situation where we did not reach every single student, however, the number of responses (890) captured during this first semester of study demonstrates the value of the findings.
**Lack of Control or Comparison Group**

Many of the questions in the present survey ask students to compare their experiences in ZTC classes to their own experiences with commercial materials. A future research initiative will compare the experience of students using OER and ZTC materials to that of students in a control group. However, the present findings are valuable as a measure of student experience with an innovative practice.

**Conclusion**

In this study, students overwhelmingly reported that their experience in a ZTC course was positive. Students would recommend ZTC courses because of their very nature—having no cost, but also because the materials are easier to access and students felt it was better for learning. Among the major findings of this study are that students were able to access course materials more easily in their ZTC courses than via traditional textbooks, and they typically accessed course materials during the first week of classes or before the semester started. This is in stark contrast to instances where a lag in financial-aid disbursement may force students to wait weeks into the semester to purchase course materials, or when financial pressures keep students from ever purchasing textbooks. Most students reported their experience in ZTC courses as positive, would overwhelmingly recommend ZTC courses, and felt they learned as well using digital materials as they have in the past with traditional print textbooks.

Students reported accessing their ZTC course materials primarily through their own computers and their mobile phones. The student-opinion data makes clear that whatever materials and platforms instructors use (including learning-management systems, links to websites, pdf files, etc.), the materials should be mobile-accessible and optimized.

Student responses also highlight the need for course materials to be print-optimized, in addition to mobile ready. Issues around printing were revealing and complex: Most students did not print their ZTC texts, but those who did had reasons worth considering. These students wanted to annotate their texts, preferred print, or found the technology cumbersome. Considerations for the needs of students who prefer print should include making sure ZTC course materials are printable, making print-on-demand options readily available (perhaps through a campus bookstore or copy shop that accepts book vouchers and financial aid as payment), or including digital reading and notetaking modeling, as well as skill-building exercises, in introductory and student-development courses.

For materials to be truly accessible to students who don’t have guaranteed access to a a computing device or a steady high-speed Internet connection at home, we must design for materials that can be delivered effectively on mobile devices and in print. This finding has implications for instruction, advocacy, platform design, and campus-wide systems management. Instructors and designers are presented with ever-growing options for ready-to-adapt lower cost, OER, and ZTC materials, including many “value-added” vendor options. The data presented here makes clear that whatever materials and platforms instructors select, they must prioritize materials that are optimized for mobile and print environments.

The importance of instructors modelling how to access, read, and annotate digital materials cannot be overstated. Many students mentioned their desire to highlight, difficulty taking notes with digital materials, or their preference for paper, compounded by a lack of experience with digital reading as downsides of their ZTC experience. Developing skills to read and take notes on digital materials is essential for 21st-century students. If instructors spend time early in their courses helping students develop online reading, annotating, and note-taking skills, and if colleges begin incorporating this into student orientations and student-development courses, students will likely have better learning experiences in all of their courses.
The student-opinion data analyzed here provide a lengthy to-do list for instructors and practitioners, which begs the question, how can they be supported in this work and how can they, in turn, support students working to build their digital competencies? What resources are needed to train and support instructors, and how can this professional development be maintained sustainably? Furthermore, when we make plans for facilities and student services we ought to be privileging considerations for space and infrastructure in support of the skills and facilities necessary for students to access and learn with their ZTC course materials. This is fundamental to students progressing through their studies. One approach to this end would be to ensure that student technology-fee expenditures are explicitly aligned to support student access to course materials. At a baseline, this includes access to reliable wifi, desktops, laptops, and tablets, options for free or low-cost print versions of course materials, and continuing opportunities to support digital literacy.

Acknowledgements

This research would not have been possible without the leadership of Ann Fiddler, Open Education Librarian at City University of New York, who connected the researchers and provided the supports that make OER possible at CUNY.

Endnotes

1. The survey instrument is available at goo.gl/ZY7ZcG.
3. This was the case for 5 respondents--3 at Kingsborough Community College and 2 at Lehman College.
4. Respondents provided a number of variations on course titles, so the responses were used (in conjunction with college catalog listings as necessary) to supply the official course titles. For example, respondents from the same course listed it as “Written composition and prose fiction English 114,” “ENG 114” and “ENG 114 939D,” so it was coded as “Written composition and prose fiction”. In the case were a respondent included two courses names but only one instructor, the course taught by the named instructor was recorded.
5. No categorization scheme is perfect, and there were several courses that were challenging to classify, especially considering the cross-campus nature of this survey. An explanation of the categorization schema along with the complete list of the categories and cleaned course names is available at https://goo.gl/G14U4m
6. All coding sheets for the open-ended questions are available at https://goo.gl/J47NCk

References


Appendix 1: Survey Instrument

1. Campus dropdown (student selects their campus)
2. In what course are you taking this survey?
3. What is your professor’s last name (surname)?
4. What type of course is this?
   a. Face-to-face
   b. Online only
   c. Hybrid (combination of online and face-to-face)
5. When did you first access the textbook or other materials for this course?
   a. Before classes started
   b. In the first week of classes
   c. In the second week of classes
   d. In the third week of classes or later
6. Where did you do work (reading, writing, studying, etc.) for this course?
   a. In transit, on the train or bus
   b. At home
   c. In the library
   d. At work
   e. In a public place with wifi (e.g. Starbucks or McDonalds)
   f. Study rooms on campus
   g. Common space on campus
   h. Computer labs on campus
   i. Other
7. What technology did you mostly use to access the materials (readings, textbook, videos, etc.) in this course?
   a. Phone
   b. Tablet
   c. Your own computer
   d. Your friend or family’s computer
   e. Your work computer
   f. A library computer
   g. A campus computer (location other than the library)
   h. E-reader (Kindle, Nook, etc.)
   i. Other (please specify)
8. Compared to most other courses you’ve taken, how would you rate access to the materials for this course?
   a. Easier to access
   b. About the same to access
   c. More difficult to access
   Please explain
9. How much of the required reading/viewing (including texts, videos, podcasts, etc.) for this course were you able to do?
   a. None of it
   b. Some of it
   c. All of it
10. How much of the course material did you print?
    a. None of it
    b. Some of it
    c. All of it
11. If you printed material, why did you print? (Check all that apply)
   a. I prefer reading on paper
   b. I don’t have a phone or tablet to read on
   c. I wanted to take notes on the page
   d. Reading on a screen makes my eyes tired
   e. I have limited access to a computer, tablet, or phone
   f. The professor required us to print the material
   g. Other (please specify)

12. Do you think you learn as well with digital materials as you do with paper textbooks?
   a. Yes
   b. No
   c. Not sure

13. What were the benefits for the open/free materials used in the course?

14. What were the drawbacks for the open/free materials used in the course?

15. Would you recommend a course using zero-cost materials like those offered in this course to other students? Explain your answer.
Self-Study with the Educational Technology Tell Me More: What EFL Learners do

George Gyamfi
Thaksin University (Thailand)
ggyamfi4u@gmail.com

Panida Sukseemuang & Kornsak Tantiwich
Prince of Songkla University (Thailand)
phanida.s@psu.ac.th & Kornsak.t@psu.ac.th

Pittayatorn Kaewkong
Thaksin University (Thailand)
pittayatorn@tsu.ac.th

Abstract
This study investigated 350 English as a foreign language (EFL) undergraduate students’ use of Tell Me More (TMM), a language learning technology, for self-study in a university in the south of Thailand. Two questions guided the study: 1) What were learners’ self-study practices with the TMM program? 2) How did learners’ self-study practices enhance or undermine the purpose of using the TMM program? Self-report questionnaire with subscales from Students Approaches to Learning and a semi-structured focused group interview were used to investigate the participants’ practices, effort and persistence on the TMM. The findings indicated that the learners multitasked to compensate for the lack of support from instructors and for assessment purposes, sometimes left the program on to count the time. The findings on the time of use suggested that self-study practices do not depend only on learners’ attitude or features of the learning environment but also goals set by instructors. Additionally, the findings showed that learners made moderate effort of use and were inconsistent in their self-study practices. The findings shed new light on what accounts for the effective use of educational technologies and how practices could be improved. This study would guide developers of online learning curriculums and educators on learning goals and assessment types to be incorporated in online self-study programs.

Keywords: Tell Me More; Online Learning; Learner Autonomy; Learners’ practices and Computer Assisted Language Learning.

Introduction
The acceptance and use of computers and information technologies has changed the nature of language teaching and learning (Pascarella & Terenzini, 2005). The increased flexibility, convenient access wherever and whenever, the expansion of support, promotion of active learning through in-time learning resources, a teaching pedagogy and learners’ ability to control their own learning are some of the reasons for the popularity of educational programs (Moore, 2005).

The acceptance has not triggered continuous change in how language is learned and taught but has further strengthened the call for autonomous learning. Researchers have posited that it is important for learners to learn independently because it helps in the effective development of learners’ receptive and productive skills (Benson, 2011; Pachler & Field 2001; Schwienhorst, 2007).
Initiatives have therefore been made to give students the necessary autonomy. The idea is intended to make students work independently, efficiently gain confidence and get satisfied by developing an interest in the learning process. The intent is also geared at increasing flexibility, independent access, expanding support and promoting active learning by interacting on different platforms (Dabbagh, 2002). Even though studies have shown that online self-study results in successful learning outcomes, others have reported that it does not yield the expected outcome (Weston & Bain, 2010). This is so because in an autonomous online learning environment, learning outcome is determined by factors such as how learners interact, collaborate and construct knowledge. Additionally, expectations from educators and learners themselves may influence how learners independently regulate their study online (Venkatesh, Croteau & Rabah, 2014).

Tell Me More (TMM) is one of the commonly used self-study educational technologies. Tell Me More offers comprehensive support for language learning. This educational language learning technology gives learners the opportunity to learn language anytime and anywhere. It plays a vital role in a self-study environment by adopting the role of a tutor to give meaning, feedback, direct the learning process and evaluating learning. It is used in both English as a second or foreign language contexts to enhance users’ English language skills and knowledge (Levy, 1997; Godwin-Jones, 2010; Blake, 2011).

Interestingly, studies on self-study using computer learning programs have not looked at what learners do when they study independently with the program. Research on Tell Me More have either focused on learners’ perceptions or attitudes and the effectiveness towards learning English through technology, none has focused on what happens or how students use the program for self-study (Yunus, Hasim, Embi & Lubis, 2010; Barrios, 2013; Perez, 2014). Hence, this study did not only focus on investigating what learners did when they used the Tell Me More program for self-study but also how those practices enhanced or undermined the purpose and effectiveness of using the program for self-study.

Investigating what learners’ do while using Tell Me More will not only fill the gap in research on TMM and other educational technologies but also give a holistic insight into what learners do and how it enhances or undermines the purpose of using it for self-study. Probing learners’ self-study practices will enlighten instructors on where learners fall short and practices that need strengthening to ensure effective online language learning for successful learning outcomes. For instructional designers, understanding why, how and what learners do will provide a useful guide for the development of appropriate learning goals and assessment methods. Hence, the research questions focused upon are as follows

1. What were learners’ self-study practices with the TMM program?
2. How did learners’ practices enhance or undermine the purpose of using the TMM program?

Theoretical Background

Self-directed learning

The construct self-directed learning has been described as actions directed at acquiring information or skills that involve agency, purpose, goals and instrumental self-perceptions on the part of a student (Pintrich, 2005). Zimmerman (2005), also opined that self-directed learning is the extent to which learners are able to self-regulate themselves to actively participate in learning meta-cognitively, behaviorally and motivationally. Ainley & Patrick (2006) further posited that self-study results from students’ self-regulated thoughts, feelings and behaviors directed towards the acquisition of one’s personal learning objectives.
From the definitions, self-directed learning could be described as both an attitude and the desire for independent learning that is guided or restrained by learning goals and contextual features. What then triggers one’s desires and attitudes are internally generated after countless negotiations with one’s personal psychology and environment after an assessment of the benefits and constraints of the task had been done (Dickinson, 1993). Learners are inspired from their intrinsic cognition and perceive the learning environment with which they as informative rather than an evaluative avenue. Thus, learning goal(s) directs, supports and facilitates learners to self-discover, plan and persuade them to be responsible by encouraging the feeling of personal cause and self-confidence.

Unarguably, one key feature that has advanced online learning is its capacity to stimulate independent learning. Prahtibha (2017) affirmed that the use of computers for language learning does not only make learning ubiquitous but also it encourages self-regulated learning and increases students’ motivation and language proficiency better than classroom study. This notion underlies the introduction and the use of computer assisted language-learning (CALL) technologies and the World Wide Web for language learning. This field of learning popularly conceptualizes as CALL furthers the idea of the learner as an active participant in learning (Green, Alejandro & Brown, 2009) that is “learners learning language in any context with, through, and around computer technologies” (Egbert, 2005, p. 4).

It is evident that learning independently online allows students to demonstrate absolute control of their learning process plan, monitor and evaluate learning progress. This is so because when learners self-direct their study, it allows them to reflect on the learning materials and responses to work at their own pace (Richardson & Swan, 2003).

However, in a self-study online learning environment, learners’ self-directed learning practices and commitment to a task during learning time is difficult to observe and measure. Nonetheless, these could be known through questionnaires and interview by asking students to self-report their learning practices (Appleton, Christenson, Kim & Reschly, 2006; Fredricks, Blumenfeld & Paris, 2004). Self-report involves students reporting on what they did and how they did it when they studied independently.

Therefore, this study aimed at finding learners’ self-study practices including interaction patterns, effort, persistence and any other practices that either enhanced or undermined the purpose of learning online.

Related Studies

Studies have shown that learners who studied independently resorted to specific practices that compensated for the lack of personal interaction that either ensured or undermined learning outcomes (Ulitsky’s, 2000; Murray, 1999; Nielson, 2011). However, there is no existing study on learners’ self-directed learning practices with the stand-alone CALL program Tell Me More.

Researches on TMM have focused on either users’ perception of its ease of use, usefulness, satisfaction and problems encountered. Others have also focused on its effectiveness on improving specific language skill and other languages. For example, a mixed methods study by Gyamfi and Sukseemuang (2018), on TMM users’ satisfaction did not only reveal a high satisfaction with aspects that improved their literary skills (vocabulary, reading and listening) but also the ability to use TMM for self-study, meaningful content and its language learning potential. Stakeholders in the use of educational technologies for language studies were therefore informed to selecting programs with contents that could suit users in terms of their needs and preferences. The study however suggested to appeal to learners’ interest the most and to ensure maximum satisfaction, there should be an improvement in the speaking component of the program to enhance spontaneous interaction.
Additionally, Barrios (2013) investigated the perspectives of 75 university teachers who used *Tell Me More* for half a year. The findings showed that the teachers were not highly enthused by the program. They were moderately satisfied with *Tell Me More* as regards how interesting, useful and effective the program was in training them to engage in unplanned conversations and other linguistic uses. However, the findings showed moderate improvement in some communication and linguistic skills such as oral and written comprehension, vocabulary, grammar or pronunciation. Moreover, the learners expressed discontent with some functions of the program, such as the speech recognition that is embedded in the program.

A descriptive study on undergraduate students’ achievement with TMM at four proficiency levels revealed an improvement in the proficiency level of beginners and advanced users (Gyamfi & Sukseemuang, 2017). Interestingly, TMM had no to little impact on the English proficiency of students at the intermediate+ and intermediate levels. A further statistical and qualitative analysis revealed that the significant differences between users of different proficiency groups may have accounted for the surprising findings. Specifically, the difference in time of use, learning goals and mode assessment accounted for the differences in outcomes.

Furthermore, Perez’s (2014) study on users of *Tell Me More* in a Philippine university showed that in terms of effectiveness in enhancing their communication skills, there was no significant difference between the medical and para-medical students. Users further disagreed that they encountered difficulties while using the language resource.

These studies have shown that *Tell Me More* as a self-instruction tool has strengths and weaknesses and supports the notion that learners may devise their own ways of using the program. However, researchers have focused on other dimensions of research to the detriment of investigating what happens when learners use the program for self-study. It is therefore necessary to investigate what happens in order to facilitate learning interventions for effective autonomous online learning.

**The Study**

As part of their course requirements, EFL undergraduate students from different faculties in a university in the south of Thailand enrolled to use the *Tell Me More* computer-learning program. The participants from 2015 academic year could use the program at a students’ self-access learning center and any place and time of their convenience. The users took a placement test incorporated in the TMM program before having access to the main content in the program. The test aimed to determine their level of proficiency to be assigned specific contact hours to use the program. There were four proficiency levels. For their learning goals, the beginners had to use the program for 50 hours, 40 hours for the intermediate level, 30 hours and 20 hours for the intermediate+ level and advanced levels respectively. They took a progress and an achievement test in the middle and at the end of the term respectively to measure their progress and overall achievement. The practices of learners were surveyed at the end of the academic year 2015 using the Effort and Persistence in Learning (EPL) subscale of Students Approaches to Learning Survey (Artelt, Baumert, Julius-McElvany & Peschar, 2003).

**Methodology**

A mixed methodological approach was used in this study. A questionnaire and semi structured focused group interview were used as the data collection instruments. Based on Krejcie and Morgan (1970), 350 out of 2,137 university EFL students were randomly selected for the study. Among the 350 students surveyed, 26% (91) students were males while 74% (259) were females. They were from different faculties and proficiency levels. They successfully completed using the TMM program.
for the required number of study hours in the 2015 academic year. Ten (10) participants who were from different proficiency levels and faculties were randomly and conveniently involved in a semi-structured focused group interview.

**Instruments and Data Collection**

**Questionnaire**

A four point Likert scale questionnaire ranging from 1= “Almost never” 2= “Sometimes” 3= “Often” 4= “Almost always” was used. The items in the questionnaire were based on Effort and Persistence in Learning (EPL) subscale of Students Approaches to Learning Survey (Artelt et al., 2003). Artelt and her colleagues developed the EPL to examine how learners approached learning based on their motivation, self-related beliefs and learning strategies. It originally consisted of a 4-item scale. However, the EPL was modified to ask students about what they did and how they used the *Tell Me More program* in a more beneficial way. This comprised of their effort, preferences and co-operation with the guidelines for using the program. This was done to make the items have a direct relation with the regulation of their own learning. The researcher ended up with 8 items, which were appropriate for the research context and purpose. The questionnaire was originally written in English and was translated into Thai by a bilingual expert who is socio-linguistically competent and already had knowledge about the research. Three experts in educational technology reviewed the content validity and compatibility of both the English and Thai versions of the questionnaire. The Thai version was piloted among 50 students who used the TMM program in the summer of the academic year 2015. The items recorded a Cronbach alpha coefficient value of $\alpha = .63$ which is an adequate value for internal reliability of a scale (DeVellis, 2003).

As regards data collection, the questionnaires were distributed at the end of their use of the program. In order to get a high response rate, two techniques were used for data collection. Firstly, the researcher resorted to distributing the questionnaires to students in class after an announcement had been made. The distribution and collection of questionnaires was done at different class hours. The second method of distribution was through snowball technique (Heckathorn, 1997). Here, the researcher found some subjects for the study from the selected faculties and gave them copies of the questionnaire for onward distribution to students who used the program in the 2015 academic year. Because of the large population, 450 questionnaires distributed, there was a high return rate of 350 questionnaires. However, 10 of them were either incomplete or badly filled and were excluded from the analysis. The entire data collection process took two weeks.

**Focused group interview**

A semi structured focused group interview based on student approaches to learning and their efforts and persistence (Artelt et al., 2003). An interview collected data to confirm the findings of the questionnaire. It was structured to have an in-depth examination into specific practices and approaches of learners with the TMM program. Since the questionnaires elicited data without any explanations, this instrument augmented the findings by providing a richer and a more precise date for inferences to be made.

The participants for the focused group interview were invited by phone call and an in-class announcement. For the phone calls, twenty (20) participants were randomly selected based on the responses in the questionnaire and a class announcement was made at the faculties that took part in the survey. Ten (10) students showed up for the interview at the scheduled time. A bilingual expert in both Thai and English who already had knowledge about the research conducted the focused group
interview. He was briefed on how to manage the interview process by creating rapport and keeping the respondents focused. The participants were assured of the confidentiality of their response to assure them that their response will not be revealed under any circumstances. The interview was videotaped and it lasted between 30 to 45 minutes.

**Data analysis**

The data from the questionnaire was statistically analyzed to find the frequency, percentages, means and standard deviations using an SPSS program. The means scores were interpreted according to Phongwichai (2008) as follows 1.00-1.75 (Very low), 1.76-2.51 (Low), 2.52-3.27 (High) and 3.28-4.00 (Very High).

For the focused group interview, the responses were transcribed and translated into English by the bilingual expert who conducted the interview. For the transcription, the translator listened to and transcribed the responses twice from the recorded video tape. The second transcription was done to ensure its consistency with the first transcript. Both transcripts were compared to ensure its reliability and credibility. It was then translated into English and subjected to content analysis. The analyses were later categorized into themes to complement the results from the survey.

The findings from the questionnaire and interview were concurrently analyzed and further subjected to thematic categorization. This technique complemented the limited amount of information that was elicited from the questionnaire for richer and more precise inferences.

**Results**

As shown in Figure 1 the first item asked learners to rate their instruction reading practices. The results indicated that 39% and 37% representing 265 of the students “sometimes” and “often” read...
the instructions for every activity they did. 20% (68) students reported that they “almost always” read
the instructions while 4% (14) students said they “almost never” read the instructions before they
do the activities. The high mean score (X = 2.73) recorded for this item is an indication of learners’
positive instructions reading attitude (Table 1).

Table 1: Learners practices, approaches and efforts and persistence

<table>
<thead>
<tr>
<th>Statements</th>
<th>Mean</th>
<th>S.D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I read the directions for every activity before I start to practice.</td>
<td>2.73</td>
<td>.825</td>
</tr>
<tr>
<td>2. I keep trying an activity until I get the correct answer.</td>
<td>2.72</td>
<td>.803</td>
</tr>
<tr>
<td>3. I skip to new activities when I face difficulties.</td>
<td>2.65</td>
<td>.885</td>
</tr>
<tr>
<td>4. I look at the answers in the answer key when I answer a question incorrectly.</td>
<td>2.54</td>
<td>.863</td>
</tr>
<tr>
<td>5. I go to the answer key immediately to do the activities.</td>
<td>1.87</td>
<td>.812</td>
</tr>
<tr>
<td>6. I leave the program on to count the time.</td>
<td>2.45</td>
<td>.879</td>
</tr>
<tr>
<td>7. I ask someone to do the activities for me.</td>
<td>1.47</td>
<td>.777</td>
</tr>
<tr>
<td>8. I find help from other materials (google translate, dictionary, google).</td>
<td>2.24</td>
<td>.863</td>
</tr>
</tbody>
</table>

The second had the second highest mean score of (X = 2.72). The high mean score does not only
show the efforts learners’ made but also their persistence during their self-study with Tell Me More.
The findings also showed that majority of the students, 39% and 38% representing 265 students
reported that they “sometimes” and “often” kept trying an activity until they got the correct answers.
19% (63) of the students reported to have “almost always” tried until they got the right answer while
4% (12) students indicated that they showed no effort.

With regard to what learners did when they faced a challenge in answering a question, the findings
indicated that 40% (135) students sometimes skipped an activity whenever they found it difficult
while 33% (111) students often skipped an activity when they cannot do it. 20% (68) “almost always”
skipped an activity while 8% (26) “almost never” skipped an activity. The high mean score (X = 2.65)
of this item suggest an inconsistency in learners’ report of trying until they got the right answer to a
task (item 1).

The questionnaire further asked participants to rate what they did when they got an answer wrong.
The findings indicated that 31% (106) and 16% (50) of students often and almost always consulted
the answer immediately they got an answer in an activity wrong. 45% (152) sometimes did that while
8% (27) almost never immediately looked at the correct answer whenever they got a question wrong.
The mean score for this item was at a high level of X = 2.54. This also shows the inconsistencies in
what the learners report of trying until they got the correct answer to a task (item 1).

As shown in Figure 2, it was found out that 36% (122) “almost never” went straight to the answer
key to do the activities. 45% (153) of the respondents also indicated that they sometimes went to the
answer key first before doing the activities. 15% (51) often went to the answer keys for solutions while
4% (14) “almost always” look at the answers before doing the task. The mean for this item was X =
1.87. The low mean score for this item suggest that the learners made some efforts in doing the tasks
in the program. It therefore points to the efforts learners made while they used the program and to
some extent explain why students reported that they kept trying until they got a question right (item 2).

As regards the time spent on the program, it was revealed that 13% (42) almost never left the
program on to count the time while 44% (151) sometimes left the program on to count the time,
29.4% (100) often left it on to count the time. 14% (47) reported to have “almost always” left the program on to count the time. This item had a high mean of $X = 2.45$. The low mean score for this item suggests that the learners may not have left the program on to count the time.

The findings further indicated that 65% (222) almost never made others do the activities or task in the program for them. While 22% (74) showed that students sometimes made others do the work in the program for them but it was minimal, there was a 10% (33) indication that the students often did that. 2% (8) reported to have always made others do the work for them. This item recorded a very low mean score of $X = 1.47$. Though the mean score of this item was very low, the percentages mean that majority of the students showed a great sense of responsibility by doing the task in the program on their own.

The results further revealed that 48% (163) and 27% (91) sometimes and often found help from other materials while using the program. 7% (23) almost always resorted to other materials for help while 18% (60) never sought help from other materials such as a google translate or dictionary or the grammar book. The mean score for this item was low at $x = 2.24$. Although this item has a low mean score, high percentage of learners sometimes and often resorted to other forms of materials in addition to the content of the TMM program to enhance their self-study. This item further confirms learners’ actions of trying until they got the answer correct (item 2). Learners may have kept trying by resorting to other materials.

![Figure 2: Frequencies, Percentages and means of Learners practices, approaches and efforts and persistence](image)

**Discussion**

1. What were learners’ self-study practices with the TMM program?

   **Multitasking**

   Since self-study does not imply learning in isolation, the learners reported to have multitasked by sometimes and often consulting other sources such as google translator, online dictionaries and...
other supplementary materials for better understanding (item 8, figure 2). The learners may have also multitasked because they may have found other sources of information as relevant to their unconscious acquisition of language. This shows the freedom of choice or flexibility the online learning program gave the learners. The internet provided learners many ways and options of making self-study through different media possible, easy and effective. Hence, the TMM program eased and enabled learning practices beyond its immediate online learning environment. This finding confirmed Jarvis’ (2013) study that EFL learners make use of other computer-based resources to aid their conscious learning of English language. This is evident in one participant's response. He says:

“The way the program is set up encourages me to seek help from other sources. Sometimes there are no explanations further to where and why I got an answer wrong. This raises motivation to search further for help to know where I am completely wrong.”

**Leaving the program on to count the time**

Additionally, the learners’ sometimes and often left the program on to count the time (item 6, figure 2). One reason that may have accounted for this practice as revealed in the focused group interview was that assessment of the course for which the *Tell Me More* program was a part of was based on the number of hours spent on the program. Hence, students may have focused on fulfilling the time requirement as opposed to learning the content in the program. Learners saw leaving the program on to count the time as an easy approach to gain scores and fulfill the program’s requirement. Moreover, what may also hold true is that the learners may have finished doing the assignments in the program before the required time. Hence, they left the program on to fulfill the time requirement. This finding not line with Matuga (2009) study that learners would attend an online learning course may exploit other means for good grades. It also supports Bacow, Bowen, Guthrie, Lack and Long (2012) and DeGagne and Walters’ (2010) study that giving time restrictions to students may not motivate learners to learn. Some respondents gave the following comments during the focused group interview

“I leave the program on to count the time because most of the time I finish doing the activities in the program before the required number of hours. Therefore, the only way to get the grade is to leave the program on since the hour is still needed.”

Another respondent remarked:

“I do not focus on the hours of use. I focus on the content but if I continue to do that, I will end up not fulfilling the minimum hours. Therefore, I leave it on however I think there is no need to focus on the hours but the questions that are answered correctly.”

Comments from two respondents confirmed speculations that the students left the program on to count the time without doing the activities. They said:

“Since it is only the time that is needed to get the score for using the program, I leave it open for the time to count so that I will get the score at the end of the semester. It is an easy way out.”

“I leave the hours to count because it is only the hours that is needed for the grades. When I do this I can study other subject and will not waste my time on the program.”

The findings on the time further signify that learning goals had the capacity to influence students’ practices. Therefore, to demonstrate a workable time management strategy to avoid leaving the program on to count the time, assessment of learning progress in autonomous online learning should
not be solely based on time (Roper, 2007). There should be innovative ways to assess learning progress that also focuses on content.

Inconsistent self-study practices

The learners’ showed responsibility by first reading the instructions of the learning activities before they started using the program (item 1, figure 1). They also showed eagerness and motivation to learn by constantly trying an activity until they got the answers correct (item 2, figure 1). The learners also did not ask other people to do the activities for them (item 7, figure 2). This shows their readiness, acceptance and the sense of responsibility for autonomous learning. One respondent during the interview affirmed this:

“I cannot rely on anybody to do the activities in the program for me because everybody is using the program and responsible for the outcome at the end of the semester. I had to put in effort to answer the questions in the program correctly to make me feel good.”

However, some learners often and almost always skipped when they faced tasks that were challenging or beyond their ability (item 3, figure 1). In addition, their practices of sometimes and often looking at the answers before doing the activities and immediately after trying once obviously undermined the efficacy of the program (figure 2). One participant said during the interview:

“I do not know how to find help from other internet sources; I just skip when the activity it is higher than my level of ability or when I cannot use the activity in my daily life. Moreover, I look at the answers in the answer key.”

These unstable learning practices signify that students may not be able to control themselves in their self-study with programs that contain in-built answers. These behaviors may not help instructors know the real impact of the program on students English language ability. These findings support Waemusa, Srichai and Wongphasukchote (2008) study that learners may demonstrate unstable learning practices in their online self-study learning process. However, this aspect of self-study is difficult to control because of the lack of external monitoring. It further confirms Sukseemuang (2009) findings and recommendation that though learners may favor self-directed learning, they may however need some form of control to engage in the right learning practices.

2. How did learners’ practices enhance or undermine the purpose of using the TMM program?

Learners’ effort and persistence

Through the self-report, it was noted that majority of the students exhibited considerable effort in their instruction reading practices (item 1, figure 1). This showed that the users read and understood the instructions before they started doing the task in the program. They also showed commendable efforts and persistence to get the correct answer whenever they answered a task wrongly (item 2, figure 1). This showed students desire to use the program to improve their level of English. Moreover, they almost never asked others to do the activities for them (item 3, figure 2). When asked about the efforts they made while they used the program, one respondent said,

“When I use the program, I have to think hard before I can complete the activities. Though it makes it less fun, it helps me improve my English. I can see about 70% improvement in my English language skills and it is because I keep trying.”
These could be seen as behaviors that do not only show learners interest in a task but also signify that learners are benefitting from the task. However, students' self-report of skipping to new activities whenever they faced some challenges and looking at the answers before doing the task may counteract their effort. Hence, learners are likely to skip other activities when they find the current activity they are on difficult or irrelevant for their level. On the other hand, they may persist if the find the activities they are engaged in meaningful or relevant. Skipping to new activities when they face challenges suggests that learners may need support or assistance in their self-study. It also denotes that learners may not be interested in using the program or the program was not relevant enough to sustain their interest for a long time or even lack self-control in their autonomous study. It further confirms the study by Shea, Pickett and Li (2005) and Mason et al. (2010), that learners may feel unmotivated to learn online for many reasons such as relevance or difficulty of a task. Learners' practices of looking at the answers before doing the task may undermine the effectiveness of the program (item 1, figure 2). It may not help instructors know the actual effect of the program on students' performance. This is evident in a comment made by one of the respondents during the interview:

“I have no time to find help from other internet sources; I skip to a new activity when I find the current on challenging for me. I sometimes also go to the answer key for solutions”

Even though students showed effort and persisted to benefit from the program to improve their level of English, they still found ways to cheat by looking at the answer key before doing the activities in the program. They sometimes and often left the program to count the time without learning the content in the program to show learning progress. These practices undermined the effectiveness of the program. This finding confirms the studies by Bacow et al. (2012) and DeGagne and Walters (2010) that specific time commitment may push students to use a learning technology. It is however not in line with the study by Orr, Williams and Pennington (2009). However, the principles of self-directed learning such as learner involvement, information searching skills, freedom of choice and selection or skipping of task that were challenging, meaningful or relevant or otherwise clearly guided their independent study (Little, 2006).

Conclusion

In sum, the study revealed that learners self-direct their online learning in ways that included multitasking, leaving the program to count the time and other inconsistent self-study practices. Learners multitasked not only to complement the limited information in the program but also to show their persistence and interest in a task. This enhances learning outcome. However, learners left the program on to count the time to satisfy the time requirement for assessment purposes. This mean that whereas some students will genuinely use the program to improve their proficiency, others with strong technological skills will manipulate the program to their advantage by exploiting technological loopholes in order to satisfy the requirement of the program (Haber & Mills, 2008). Lastly, for learners to engage in effective and consistent demonstrate without any external monitoring, curriculum designers could design appropriate learning goals and assessment methods to ensure consistency and measure learning progress.

Implications

Learning goals

The findings imply that learning goal influences self-study practices, it is therefore recommended that time should not be the sole measure learning progress. An additional means such as getting a
specific score in an achievement test to learners will help learners know the effect of the program on their English language skills. Moreover, Quantifiable ways such as incorporating contents of online learning programs in written tests could be used to supplement assessment to measure learning progress.

**Training learners, multitasking and online learning skills**

Due to the multitasking and inconsistent practices of learners, it is suggested that learners could be trained on how to search for additional information and what to do when they face a challenging task. They could be trained on some appropriate self-study skills such as seeking assistance from appropriate online sources to help smoothen the learning process. This may help minimize the practice of seeking answers before they do the activities and after trying once. It could also help learners monitor and evaluate themselves in their learning process, have a clear sense of direction on how to set goals, select strategies and control their learning process to become successful online learners.

**Limitations And Further Studies**

There were some limitations in this study in terms of the methodology. The study utilized only self-report survey responses and interviews of learners. An additional research method such as observation would have made the findings more comprehensive. The study also focused on learners' practices without considering the perceptions that influence these practices and how these practices correlates with students' performance. It is suggested that further studies could focus on how learners' perceptions influence their practices and how these practice affect learners' performance.

**Acknowledgement**

This research was supported by the Higher Education Research Promotion and the Thailand's Education Hub for Southern Region of ASEAN Countries Project Office of the Higher Education Commission.

**References**


