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## FROM BOOKS TO MOOCS AND BACK AGAIN: AN IRISH CASE STUDY OF OPEN DIGITAL TEXTBOOKS

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### Introduction

This paper reports a work in progress to investigate the current and intended future use of open digital textbooks in Irish higher education. It begins by establishing that open digital textbooks, as a subset of the wider Open Educational Resources (OER) movement, have not featured prominently in Irish higher education policy texts. A brief synthesis of the macro-level literature reveals the strong North American influence driving innovations in open digital textbooks over the past decade, particularly in response to increasing concerns about rising costs. At the meso-level the research problem is framed by a gap in the literature and lack of information more generally about textbook use in Irish higher education, although more specifically the study aims to establish current and intended future usage of open digital textbooks. Five research questions that guide the study are then outlined along with the methodology for the first two parallel work packages: (a) an environmental scan and national baseline survey of open digital textbooks in the Irish higher education sector; and (b) a micro-level institutional case study of current practice around the use of textbooks and adoption of open digital textbooks more particularly. The final work package aspires to develop an open digital textbook initiative based on findings from earlier phases and the international literature. While the study is still at an early stage a critical perspective underpins the research as we seek to better understand the potential transformative advantages of open digital textbooks over and above the use of more conventional learning resources.

### Background

Despite textbooks still being a common feature of the higher education landscape in many countries the open digital textbook movement has not yet featured prominently in Ireland. Finding little or no explicit reference to open textbooks or open digital textbooks from a systematic search of major Irish policy texts evidences this claim. The term *textbook* for example does not occur frequently ( $n = 3$ ) in the “National Roadmap for Enhancement in a Digital World 2015-2017”, with the statement, “We will cut costs by going digital” with our textbooks’ appearing in a section under the myth of diminishing costs (National Forum for the Enhancement of Teaching and Learning in Higher Education, 2015a; p.7). More recently an Irish case study of open education policy initiatives, which is part of a wider European report

describing open initiatives in 28 EU countries (Inamorato dos Santos, et al., 2017), supports the view of a gap of policy-related activity in this area, as no reference is made to open textbooks.

On a related note, Ireland also stands out alongside of Latvia, Luxembourg and Slovenia in this European Commission report as the only countries not to identify MOOCs in the context of open education policy initiatives. The absence of the MOOC movement in Irish policy texts remains an intriguing gap, especially given the Government's current focus in the "Higher Education Systems Framework 2018-2020" on promoting flexible life-long learning (Ministry of Education and Skills, 2018). Notably, in 2017 the growth of MOOCs continued worldwide with an estimated 78 million learners registering for a free online course (Class Central, 2018). This figure is up by 20 million on the previous year and increases to approximately 130 million learners when China and other developing countries where English is not the primary language of instruction are included in the census. While globally MOOCs are still a major force in shaping thinking and the direction of the OER movement they have not yet replaced the textbook, as once predicted (Class Central, 2016), and rather it would appear the level of interest and global activity in promoting open digital textbooks is gaining momentum.

## **Synthesis of the Literature**

Most of the major open digital textbook initiatives over the past decade have taken place in North America. Of course, textbooks have traditionally been an essential part of higher education for the majority of students in the United States (US) (Fischer, Hilton, Robinson, & Wiley, 2015). While the drive for openness is anchored in deep philosophical roots the growth of open digital textbooks in the US has been partly a pragmatic response to economic crisis, underfunding of higher education and rising textbook prices. It is reported, for example, that from 1978 to 2013 textbook prices in the US increased 812% and that in 2014 a typical student spent about (US) \$2000 annually on textbooks (Baglione & Sullivan, 2016). Another US study claims that since 2006 the cost of college textbooks increased by 73%, which is over four times the rate of inflation (Senack & Donoghue, 2016). Despite rising costs Allen and Seaman (2016) found in their survey of over 3,000 US faculty that virtually all courses (98%) require a textbook, or related study materials, as part of their suite of required resources. While evidence of textbook use is clear less is known about how students use these books but there is reason to believe that copyright infringement is widespread (Scorcu & Vici, 2012).

Although there has been a proliferation of OERs in most disciplines over the past decade the reality is the level of awareness, curriculum integration and repurposing of open resources by teachers remains quite low – at least in the US (Seaman & Seaman, 2017). However, open digital textbooks – essentially a collection of OER aggregated in a manner that resembles a textbook but may also be rich with media and hyperlinks – are an exception as they have proven easier to garner support of institutional leaders, policy-makers, and major charitable donors. This claim is evidenced by the strong lead taken by organisations such as the William and Flora Hewlett Foundation and in some cases government agencies, as clearly demonstrated in the BC Campus initiative.

BC Campus began in 2012 with a project to create a collection of open textbooks aligned with the top 40 highest-enrolled subject areas in British Columbia (Burgess, 2017). A second phase began in 2014 with an additional 20 textbooks. The project continues to grow with currently over 230 open digital textbooks available and at the time of writing the BC Campus OpenEd website claims that students have saved over \$5m (Canadian) through the initiative, which now includes over 40 participating institutions. While Burgess (2017) acknowledges beyond estimated financial savings that some of the other success factors are difficult to quantify the project has contributed to the wider acceptance of OERs and has helped in terms of changing institutional culture.

## **Looking to Europe**

Around a third of the 28 European case studies reporting on open education policy initiatives previously mentioned above identify some type of current or planned open digital textbook project (Inamorato dos Santos, et al., 2017). While few rival the scale of enterprise wide projects such as BC Campus in 2017 a major open digital textbooks initiative began in the United Kingdom (UK) led by the OER Hub to test the transferability of the North American model of success to the local context. More specifically, the UK Open Textbooks project is framed by the following overarching research question:

What is the viability of introducing open textbooks in UK higher education through the testing of two proposed models: OpenStax and OpenTextbook Network approaches?

As part of the project a series of workshops has been offered throughout the UK along with the development of a teacher textbook survey. The findings of this survey, which have yet to be formally published, coupled with a growing body of research evidence on the usage, implementation and sustainability of open digital textbooks will inform our own work in the Irish higher education context.

## **Research Problem**

At this point our knowledge of whether traditional textbooks remains core to the student learning experience in Irish higher education is largely speculative. With more widespread implementation of Virtual Learning Environments (VLE) throughout the sector and the growth of OERs it might be reasonable to assume that usage of textbooks is declining; however, we simply do not have data to support or refute this assumption. In a similar vein, we have little or no data on the amount of money Irish students spend on textbooks to support their study, to what extent they decide to purchase them, and if the costs are a significant barrier to their success. Accordingly, the research seeks to address this gap in our knowledge.

At a deeper level we still need further evidence to test the underlying assumption that the use of textbooks (print and digital) and the students who utilize them will have better academic experiences and demonstrate improved academic performance (Hilton, 2016). Putting aside any projected financial savings the deeper question is whether the development of open digital textbooks leads to a transformative advantage over the use of more conventional study

resources. In other words, we should not lose sight of the risk of merely replacing an old technology (print textbooks) with a newer innovation (open digital textbooks) without fundamentally questioning the role and value of the textbook in new 21<sup>st</sup> century models of education.

## **Research Problem**

Set against this wider backdrop and the emerging literature in the area the research seeks:

- To investigate the current and intended future usage of open digital textbooks in Irish higher education and their transformative potential.

## **Research Questions**

The research is framed around five overarching research questions:

- What is the current usage level of textbooks in Irish higher education?
  - What is the current use of textbooks?
  - What is the current use of digital textbooks?
  - What is the current use of open digital textbooks?
- What awareness, experience and knowledge do Irish educators have of open digital textbooks?
  - What value do lecturers place on textbooks?
  - What is lecturers' practice in terms of textbooks?
  - What are lecturers' perceptions of the quality, suitability and potential of open digital textbooks?
- What awareness, experience and knowledge do Irish students have of open digital textbooks?
  - What value do students place on textbooks?
  - What is students' practice in terms of textbooks?
  - What are students' perceptions of the quality, suitability and potential of open digital textbooks?
- What are the perceived advantages and disadvantages of adopting open digital textbooks in Irish higher education?
  - What are the pedagogical benefits?
  - What are the actual and potential financial benefits?
  - What are the potential disadvantages?
- What are the perceived barriers and enablers likely to influence the successful enterprise-wide adoption of open digital textbooks?
  - What are the major barriers?
  - What are the major enablers?
  - What are the key lessons for Irish educators?

## **Methodology**

The research adopts a mixed methods approach involving online surveys; follow up interviews; and analysis of public databases and relevant websites potentially listing textbook requirements. There are three main work packages. The first work package involves an environmental scan and national baseline survey of the sector to establish the status of textbooks, and more specifically the level of adoption of open digital textbooks, in Irish higher education. Work package two will undertake a micro-level institutional case study of current practice around the use of textbooks and adoption and perceived value of open digital textbooks more particularly. The final work package aspires to develop an open digital textbooks initiative and wider Irish community of practice in the area based on findings from earlier phases and key lessons from international literature.

## **Preliminary Findings**

To date the findings of the first work package undertaking an environmental scan of the Irish higher education sector reveals a dearth of open digital textbook initiatives. For example, a Google search using the terms “open textbook”, “open digital textbook”, “Ireland”, and “Irish Higher Education” reveals only one result on the first three pages relevant to Ireland, which happens to be a Twitter stream dating back to 2010. Further analysis of potentially relevant links using the wider search terms “Ireland” and “Open Educational Resources” locates just two main initiatives of any note.

Firstly, search results provide information on the now closed National Digital Learning Resources (NDLR) service funded by the Higher Education Authority (HEA) of Ireland. The NDLR was an OER service providing a national open repository, online resource bank and community portal, shared between the seven universities and 14 institutes of technology (Marcus-Quinn & Diggins, 2013). The service was originally established and funded by the HEA in 2005 as a pilot project and went to full service in 2010. The NDLR’s mission was to promote and support Higher Education sector staff in the collaboration, development and sharing of learning resources and associated teaching practices (McAvina & Maguire, 2011).

According to Marcus-Quinn and Diggins (2013) by 2012 the NDLR service hosted over 27,000 digital teaching and learning resources. From 2005-2012 the HEA spent approximately €5m on the NDLR service (HEA, 2012; cited in Marcus-Quinn & Diggins, 2013). Given the level of funding and reportably mixed reviews of the service the NDLR was placed in limbo in 2012 before any formal evaluation could take place (National Forum for the Enhancement of Teaching and Learning in Higher Education, 2015b). The NDLR’s demise remains a sensitive topic in Ireland and although speculative the experience may partly explain why there has not been a more focussed policy response to the emergence of open digital textbooks as a subset of the wider OERs movement.

The second major initiative this wider search strategy identified was a report on “Learning Resources and Open Access in Higher Education Institutions” in Ireland written by a large team led by Dr. Angelica Riskey from the University of Limerick (National Forum for the

Enhancement of Teaching and Learning in Higher Education, 2015b). While the emergence of open digital textbooks is acknowledged in this report to a large extent the deliberate focus on *little OER* placed *big OER* such as MOOCs and larger scale open education initiatives outside of scope. This decision is partly understandable given the conception of OER was based on the following William and Flora Hewlett Foundation definition which incorporates a repurposing dimension:

*“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. Unlike traditionally copyrighted material, these resources are available for ‘open’ use, which means users can edit, modify, customize, and share them” (National Forum for the Enhancement of Teaching and Learning in Higher Education, 2015b; pp.7-8).*

In many respects the report places the value of little OER in their ability to go beyond and/or provide alternatives to textbooks. This perspective is reflected in the national online survey of academic staff completed as part of the project by 219 respondents in April 2015, with one participant reporting:

*“Yes, I value having resources available. Not being constrained by what the textbook authors and editors decide to provide for us is very important. It’s part of the academic dialogue” (National Forum for the Enhancement of Teaching and Learning in Higher Education, 2015b; p.90).*

It follows that no explicit reference to the potential of the open digital textbook movement appears in the report’s final recommendations, which focus on raising greater awareness and showcasing excellent OER, embedding OER and a wider Open Educational Practices (OEP) philosophy more intentionally within national professional development initiatives, and a call for an ongoing programme of action research.

A follow up search of the National Forum for the Enhancement of Teaching and Learning in Higher Education’s website along with their dedicated T&L Scholarship Database using the terms “textbook” and “open textbook” revealed only one other relevant publication. A review of Ireland’s higher education technical infrastructure conducted in 2016 compared the findings of an online survey of senior IT managers and Chief Information Offices (CIOs) at 22 Irish institutions with the results of the annual US-based Campus Computing Survey to provide an international benchmark on key priorities (National Forum for the Enhancement of Teaching and Learning in Higher Education, 2017). As shown in Figure 1 below using survey results reproduced from the original report (p.26), 68% of Irish respondents compared to 79% in the US perceive that open source textbooks and OER content will be an important source for instructional resources in five years. The gap between the two countries is even more notable in the findings that only 17% of Irish respondents as opposed to 38% in the US consider open source OER textbooks very important looking to the future. Therefore, from the perspective of

Irish senior IT managers and CIOs the adoption and wider use of open digital textbooks in higher education at this time does not appear to be a high priority initiative.

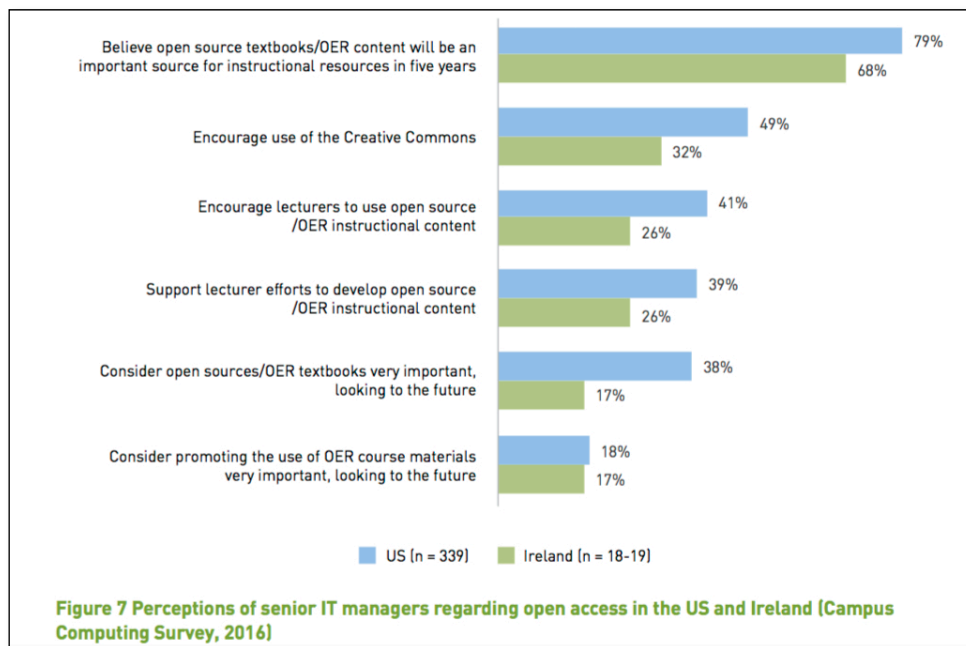


Figure 1. Perceptions of senior IT managers regarding open digital textbooks

Finally, two other desk research methods were deployed to locate relevant open digital textbook initiatives. A dearth of activity in this area was found by using the search function on the websites of all Irish universities and institutes of technology using the term *open textbooks*. In a similar vein, searches of the websites of the Computers in Education Society of Ireland (CESI) and Irish Learning Technology Association (ILTA) yielded no relevant results; and nor did a keyword search of the published proceedings of related conference papers and presentations dating back to 2010.

At the institutional level a preliminary analysis of an internal database of textbook requirements for students at Dublin City University (DCU) for Semester 1 and 2 of the 2017/18 academic year confirms widespread expectations of textbook use. This conclusion is triangulated by information contained in a publicly searchable website listing textbook requirements. For example, over 3,000 of DCU’s modules mention at least one textbook. Of the textbooks list 15,922 (72%) are classified as required whilst 6,729 (28%) are listed as recommended reading. However, further analysis of the specific textbooks listed is required to identify what proportion is available in printed and digital formats. This analysis is currently underway at the same time as the development of an online survey to gather data on the practices and perceptions of both staff and students concerning their use (or non-use) of print and digital textbooks. We hope to report the results of these surveys along with the findings of a national survey exploring the use of and perceptions towards the value of open digital textbooks in the next six months.

## Conclusion

This research in progress addresses a significant gap in our understanding of the adoption, patterns of use and perceived advantages and disadvantages of open digital textbooks in Irish higher education. The study takes place at a time when there remains a dearth of government policy and related research in the use of both big and little OERs in Ireland. This interpretation is supported by our desk research of Irish policy texts and evidence from multiple sources revealing no major initiatives specifically in the area of open digital textbooks. Given the North American experience, and growing level of interest in both the UK and Europe, we hope this Irish case study will contribute to better understandings of the potential transformative advantages of open digital textbooks. Of course, like MOOCs we also understand that textbooks are not a single monolith entity and their educational affordances depend on how they are used by teachers and learners. For this reason, the research aspires to pilot and launch an Irish open digital textbooks initiative as a platform for further learning and development.

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