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HOW OPENNESS IMPACTS ON HIGHER EDUCATION

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INTRODUCTION

Openness, the opposite of secrecy, refers to a kind of transparency which is usually seen in terms of access to information, especially within organizations, institutions, or societies. At a societal level, there is a move towards openness, for example through open government, which promotes freedom of information, where government decision-making at all levels is transparent, public records are open to public scrutiny, and individuals have rights of access to such information (Peters and Britez, 2008). There has also been increased participation of government-supported or non-profit organizations in this regard in recent years. This includes initiatives like the UNESCO World OER Congress in 2012 and UNESCO/COL's development of policy guidelines covering implementation and standardization of open educational resources (OER) in higher education (Knox, 2013), encouraging governments and higher education institutions to develop, use and measure the impact of open educational resources (Open Educational Quality Initiative).

Openess is also causing disruptions in higher education and scientific research, becoming the 'watermark' for an increasing number of platforms, practices,

and learning materials from institutions and individuals worldwide (Peter and Deimann, 2013). This policy brief describes some of these potential disruptions as they pertain to key higher education activities of teaching and learning, research, and the impact on higher education policy.

UNDERSTANDING OPENNESS

The concept of openness is usually discussed in relation to technological developments that facilitated its emergence (Peter and Deimann, 2013), in particular, the rise of digital technology and the Internet, which are changing the nature of information by making it more accessible to anyone and making it more 'responsive', allowing information to be enhanced or degraded by anyone (Peter and Deimann, 2013). Openness is being also driven by the fundamental philosophical claim that knowledge should be considered a common good and be accessible as openly as possible. In the context of high costs of education and the need to make education more accessible and affordable, it has been argued that, if education is paid for by the public, then research and content produced with those public funds should be publicly available (Wiley, Green, and Soares, 2012).

However, openness means different things to different people. One view is that the most important aspects of openness are free availability and as few restrictions as possible on the use of the resource, whether these be technical, legal, or financial barriers (European Parliamentary Research Service, 2014). Some equate open with "free", while open education advocates are working towards a common vision that defines "open" as free, copy-able, remix-able, and without any barriers to access or interaction (Johnson et al., 2013). Thus, meanings of openness can be understood in relation to the degree of openness. For example,

> To the extent that people have access to information, without restrictions, that information is more open than information to which people have access only if they are subscribers, or have security clearances, or have to go to a particular location to get it. But accessibility, quite similar to the concept of transparency, is only one aspect of openness. The other is responsiveness. Can one change the information, repurpose, remix, and redistribute it? Information (or a process or an institution) is more open when there are fewer restrictions on access, use, and responsiveness. (Committee for Economic Development, 2009)

UNDERSTANDING 'OPEN' IN EDUCATION

In education, there is still considerable lack of clarity concerning the breadth and depth of openness, and there are thus various meanings and understandings of the concept of 'open' in education (Peter and Deimann, 2013). Defining openness and open education can thus be viewed along a continuum with varying degrees of openness and access to knowledge as the guiding core principles (Olcott Jnr, 2013). Many donor-funded projects (most often led by universities) are providing space to experiment with different models of openness and research the educational effect that these might have. Various

initiatives such as OER, Open Access (OA), Open Source and Massive Open Online Courses (MOOCs) are regarded as forms of openness and are often discussed under the 'open' banner. These are described briefly below:

Open Access

Open Access (OA) usually refers to research articles that are freely and openly available to the public for reading, reviewing, and making and distributing derivative works (Wiley and Green, 2012). OA literature is digital, online, free of charge, and free of most copyright and licensing restrictions. It is made possible by the Internet and the consent of the author or copyright-holder (Suber, 2004). Open Access publishing is compatible with peer-review, and open access articles typically go through normal refereeing and editorial processes (Open Humanities Press). However, there are two primary and complementary strategies to achieve OA: via self-archiving where authors make their articles freely available in digital form on the Internet, usually on personal or university/departmental websites; and via Open Access journals, where authors retain copyright of their work, and the articles are available free of charge for all readers immediately upon publication. There is a growing number of Open Access Journals, with a list of those currently available being maintained by the Directory of Open Access Journals at http://www.doaj.org (10,066 listed as of November, 2014). Furthermore, many organizations are also adopting open access policies. For example, UNESCO has adopted an Open Access Policy for its publications, with the aim of helping to reduce the gap between industrialized countries and those in the emerging economy. It allows everyone to add information, modify contents, translate texts into other languages, and disseminate electronic publications (UNESCO Open Access Publications).

Open Source Software

Open source software is computer software that is distributed along with its source code (code used to create the software) allowing the public to use and/or modify the original design free of charge. It usually has a licence in which the copyright holder provides the rights to study, change, and distribute the software to anyone and for any purpose. Open source software is very often developed in a public, collaborative manner, which means that it is intellectual property shared amongst all who have helped develop or modify it (Pickett; OpenSource.com).

Open Educational Resources

OER refers to any educational resources (including curriculum maps, course materials, textbooks, streaming videos, multimedia applications, podcasts, and any other materials that have been designed for use in teaching and learning) that are openly available for use by educators and students, without an accompanying need to pay royalties or licence fees (Butcher, 2011). OER can exist as smaller, stand-alone resources (reusable learning objects), that can be mixed and combined to form larger pieces of content or as larger course modules or full courses. OER can also include simulations, labs, collections, journals, and tools. These materials are considered open if they are released under an open licence such as a Creative Commons licence. There are various initiatives which focus on the provision, development and adaptation of OER. For example, UNESCO

has launched the OER Platform, which has resources available in 13 languages under a Creative Commons licence (see http://www.oerplatform.org). It allows communities of practice, including teachers, learners, and education professionals, to freely copy, adapt, and share their resources. This sets an important example for UNESCO member nations to release publicly funded resources under open licenses.

Massive Open Online Courses (MOOCs)

Educause provides the following simple explanation of a MOOC:

> *A MOOC is a model of educational delivery that is, to varying degrees, <u>massive</u>, with theoretically no limit to enrollment; <u>open</u>, allowing anyone to participate, usually at no cost; <u>online</u>, with learning activities typically taking place over the web; and a <u>course</u>, structured around a set of learning goals in a defined area of study (Educause, 2013).*

Definitions of MOOCs tend to emphasize openness in relation to the ability of learners to be able to access content through web based platforms, openness in terms of cost, openness in terms of the use of open courseware, or openness with respect to learner collaboration (Mundy and Geskell, 2013). However, there are two distinct types of MOOCs when compared in terms of their underpinning theory, format and structure, namely cMOOCs (or connectivist MOOCs) and xMOOCs (the 'x' is adapted from MITx and edX). Whilst the two types of courses have some common features, they clearly differ with regards to their learning theory and pedagogical model – in particular, the different way in which social interactions happen during the courses. The concept of openness in cMOOCs and xMOOCs also has different meanings, with learner autonomy, peer-to-peer learning and social networking being emphasized in cMOOCs, whilst xMOOCs are based on a tutor-centric model that establishes a one-to-many relationship to reach massive numbers (Rodriguez, 2013). In xMOOCs, 'open' does not necessarily refer to open content or even open access, but may only equate to 'no charge' (Johnson et al., 2013) (with the option of a fee for certification).

Progressively, we are seeing the release of information and knowledge under open licences, ranging from governments releasing open content to publishers releasing open articles; which demonstrate a growing interest in and commitment to increased openness in higher education. It is also clear that there are varying degrees of openness, and that the term 'open' is being used loosely, often to refer to 'free' – for example, most MOOCs operate in proprietary, cloud-based environments. This creates a tension regarding the use of the term.

HOW DOES OPENNESS AFFECT THE PRACTICE OF TEACHING AND LEARNING?

A significant impact of openness is with regards to its interplay with pedagogy. Higher education institutions were traditionally built on the principles of scarcity and closure, such as restricted access to libraries, special knowledge that could only be passed on

in the lecture theatre, and closed communities of scholarship (Hall, 2014). Traditionally universities and academics were providers of content, positioning the academic as the expert with a body of knowledge to communicate to students. Openness is creating new forms of social learning that challenge these traditional roles in education systems, particularly the notion that formally credentialed 'experts' are the only producers of knowledge or the sole sources of innovation (Schmidt et al., 2009).

However, most MOOCs seem to emulate the logic and structure of traditional university courses. Additionally many MOOCs also appear not to be open at all, despite their marketing claims to the contrary. These new models are predominantly old educational ideas, repackaged using new technologies and simply magnifying the educational weaknesses of their predecessors.

Nevertheless, the increasing availability of MOOCs allows the views of 'experts' to be accessed more easily, providing the opportunity to learn from the world's best teachers. This can be particularly useful when considering that the innovative flipped classroom – where students complete course material ahead of lessons to free up time with their teachers in-class to debate issues and solve problems with peers – is gaining momentum, often putting social media at the centre of course design (Hall, 2014). This allows teachers to use contact time with students to support engagement and to nurture discussion, debate, and practical application, or to support student research activities, thereby providing students with tools to advance their own understandings. It can also enable better personalization of instruction (Wiley and Green, 2012), by focusing less on the content (which is freely available) and more on the facilitation of learning interaction.

Using content with open licences is particularly useful for educators as they allow the freedom to modify content, which provides an opportunity for educators to draw inspiration and ideas from others and to adapt curricula to suit local needs and contexts. The sharing of resources also opens access to intellectual capital, which can dramatically improve the affordability of education.

However, within institutions, academics have traditionally been encouraged to protect their intellectual capital, and sharing teaching methods, approaches, and materials is not necessarily a common practice. Academics may also sometimes be cautious because moving toward openness exposes teaching to the quality-increasing pressures of peer review. However, it also creates an unprecedented level of transparency to all higher education stakeholders with regard to institution's teaching and learning activities (Wiley, 2006).

As textbook costs rise, there is a simultaneous move toward digital textbooks, which, combined with the potential of OER, is proving to be an option to mitigate the rising cost of textbooks. Open textbooks provide academics with free and legal permissions to engage in continuous quality-improvement processes such as incremental adaptation and revision, empowering academics to take ownership and control over their courses and textbooks in a manner not previously possible (Wiley and Green, 2012).

Openness and MOOCs, in particular, are also raising discussions about hybrid learning/blended learning models, and determining the optimal mix of online

and on-campus teaching and learning, both within individual institutions and across whole systems of higher education (Gallagher and Garret, 2013). Large-scale learning opportunities like MOOCs can generate large amounts of data (through learning analytics) on how students work with materials and interact with each other, thus providing data on personalizing the learning experience and for performance measurement. This would allow educators to understand how students learn and for them to improve their teaching methods. It may thus inspire more academics to be better and more creative teachers. This can also allow for 'evidence-based teaching' – detecting what forms of teaching work well for what context (Bry, 2014).

THE IMPACT OF OPENNESS ON RESEARCH

Rising journal prices over the last decade mean that most universities, particularly those in developing countries, can no longer afford subscription costs, thus reducing their access to up-to-date research (SHERPA). Openness and OA are regarded by many as a solution to this challenge.

Openness allows for data that was traditionally unavailable to the public (for example, weather data and traffic data) to be freely available in real-time or near real-time. Anyone with an Internet connection is able to freely access works that once cost hundreds or thousands of dollars, such as a set of encyclopaedias (Wiley and Hilton III, 2009). These massive digital data flows are regarded by many as the new raw materials for research. The wide availability of open data and OA publications, together with technologies like cloud storage, helps address the challenge of poorly resourced libraries, and provides wider access to information to support research functions.

Universities are also beginning to see the value of open publishing. For example, in February 2008 Harvard University's Faculty of Arts and Sciences adopted a policy that requires faculty members to allow the university to make their scholarly articles available free online.

For academics, publishing openly, whether via open access journals or self-archiving, can lead to more citations and more visibility for their work. Additionally, published studies that make data openly available also tend to receive more citations. There have been concerns raised about the quality of peer review in open access journals. However, there has been no controlled study to compare peer review in open access versus subscription journals (McKiernan, 2014).

Openness also facilitates the integration of research functions more easily into course activities – for example, if academics no longer need to focus on lecturing, then students can spend more time doing research, much of which might be advancing a broader research agenda being coordinated by an academic.

THE IMPACT OF OPENNESS ON HIGHER EDUCATION POLICY

Open service providers such as Massachusetts Institute of Technology (MIT) Open Courseware (OCW) play an important role in educational innovations due to their role in enabling rapid, inexpensive, low-risk experiments. Big industry players are also engaging with providing educational platforms – for example, Apple's iTunesU. Such initiatives allow large numbers of quality online learning materials to be leveraged to supplement and assist the classroom regardless of delivery modality (Grajek, 2013). Importantly, it also fosters a competitive climate for higher education institutions, which are losing their monopoly as knowledge experts. It has galvanized much of the senior leadership in higher education into evaluating the strategic role of online education, and is encouraging them to also develop strategies to grapple with the challenges and opportunities presented by openness (Wiley and Hilton III, 2009).

A significant result of openness is that it makes it possible for students to better choose their universities and for universities to better choose their students (SHERPA). This has important implication for universities prioritizing in options like MOOCs and has been noted as an obvious reason as to why many universities are investing in MOOCs.

Given the rapidity and relative novelty of developments in openness, aside from being certain that societies will continue to experience significant changes, it is difficult to be confident about that the future would look like. There is no single response that can successfully tackle every institution's situation and challenges. Nevertheless, it is clear that it is essential for institutions to engage with openness as a potential core organizational value if they wish to remain relevant to students, lead rather than being led by change, and contribute to the positive advancement of the field of higher education. Institutions that do not adapt to the changing context are likely to be at greatest risk of either closure or ever-tightening financial constraints.

Openness thus impacts on not just one type of policy or practice of policy-making, and it is difficult to develop policies based on certainty, especially as the terrain is evolving rapidly. Thus, universities will likely need to review and revise their existing policies and staff incentive schemes to ensure that they encourage teaching staff to embrace open practices. Such an approach may be more appropriate as opposed to creating new policies to address the changes occurring, which may reduce the strategic focus of institutions around a single choice at a time when the choices are unclear.

With these factors in mind, the following policy considerations may thus be useful:
1. Consider the degree to which policies motivate educators to invest in ongoing curriculum design, creating effective teaching and learning environments, and developing quality teaching and learning materials. Some universities may already have policies that encourage such investments: for example by including these elements in job descriptions, including these activities in rewards, incentives, and promotions policies, or appointing staff and units dedicated to these tasks. While universities may wish to incentivize these activities in different ways, according to their spe-

cific mission and vision, all would benefit from ensuring that their policies provide structural support to investment of time by educators in these activities, as part of a planned process to improve the quality of teaching and learning. In this regard, a policy commitment to the use, adaptation, and creation of appropriate OER, in support of ongoing curriculum and materials review cycles, would help to ensure that teaching and learning is seen as a continuing process of renewal.

2. Reflect on the extent to which policies, practices, and institutional cultures reward individual endeavour over collaboration by valuing the creation of 'new' materials over adaptation and use of existing materials and content. It may be useful to ensure that incentive structures and quality assurance processes include selecting and using existing content, as well as developing new content. Incentive structures may also reward collaborative activity and innovative applications of technology.

3. Require open access publications and the extension of 'research impact' beyond traditional academic publications.

4. Foster the development of a policy environment that rewards innovation, and mechanisms to integrate these innovations into university systems. University policies tend to be very detailed, placing many constraints on behaviour. Increasing rules and regulation makes it more challenging for academics to innovate and experiment. Most universities tend to discourage innovation except in the narrow area of research. Additionally, whilst universities may have innovations, these are usually kept on a small scale. Thus, policies may require revisions to remove unnecessary bureaucratic constraints on innovation.

5. Provide rewards to academics for facilitating students' educational experience. For example, policies may reward activities where content is engaged with before face to face interaction and can consider penalising educators for relying on lecturing to teach.

6. Make provision for relevant ongoing professional development activities to allow academics to acquire the skills and competencies necessary to perform their jobs effectively and productively. This would include recognizing the time and effort required to develop and support courses harnessing open content.

7. As open learning offers the promise of new access and opportunities for learners, and the opportunity for recognition by a credentialing institution (Conrad, 2013), universities may wish to consider whether their policies on assessment tools such as recognition of prior learning (RPL) models require revision in order to increase opportunities to access education.

8. Review policies pertaining to intellectual property rights and copyright, and consider the rights of various stakeholders with regards to intellectual capital. Universities may wish to consider the marketing value and added exposure that can be derived from making intellectual capital easily accessible under open licences (Butcher, 2011).

9. Regularly review institutional technology plans, particularly given rapid technological changes and the necessity of good ICT infrastructure to access open material. It is thus essential for institution to conduct regular reviews of technological implementation plans and revise them as necessary. To be successful, strong leadership is required to ensure that these plans are communicated convincingly to all constituents, and to ensure the involvement of all stakeholders.

CONCLUSION

Openness fosters a more democratic and competitive higher education system, with the potential to improve access to education, develop and localize open educational services to suit local contexts, and enhance the integration of education into everyday lives as part of lifelong learning. It facilitates informal, individualised, flexible and lifelong learning, and the freedom for anyone across the world (with internet access) to view these materials gives them an extraordinary spread of access, with the potential to reach and serve hundreds of thousands of learners who would otherwise not have access to education (Stacey, 2013). It is clear that openness is here to stay and is changing the nature of higher education and therefore it is essential for institutions to engage with openness as a potential core organizational value if they wish to remain relevant and contribute to the positive advancement of the field of higher education.

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As societies move towards increasing openness, higher education is also showing increasing interest in and commitment to releasing information and knowledge. This paper describes some of the common ways in which the term "open" is used and discussed in relation to open initiatives. It considers how open practices affect teaching and learning as well as research in higher education, highlighting the importance for higher education providers to grapple with the challenges and opportunities provided by openness to make them more relevant to society today. Finally, the paper considers how rapidly evolving developments in openness impact on higher education policy, and provides some policy considerations which may be useful to deliberate over.

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