Chapter 11

Cultural–historical factors influencing OER adoption in Mongolia's higher education sector

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Summary

The research presented here investigates the strategies and practices of educators from six public and private higher education institutions (HEIs) in Mongolia in order to understand the role of Open Educational Resources (OER) in their work. It addresses the question: Which cultural–historical factors shape OER activities in Mongolia's higher education sector? In addition, the study sets out to determine whether OER has the potential to move beyond a niche innovation advocated and funded by international donors to one that is broadly adopted, implemented and disseminated by local educators.

The study employed a sequential exploratory model in which qualitative interviews comprised the first stage of data collection, followed by quantitative surveys. The interviews were conducted with 14 participants recruited using a convenience sample from four Mongolian HEIs, two government organisations and three non-governmental organisations. In total, eight educators and six administrators were interviewed. A follow-up survey was conducted with 42 instructors and administrators at six HEIs, also recruited through convenience sampling. The study utilised Cultural Historical Activity Theory as a framework to analyse the data.

Findings indicate that despite recent efforts to promote OER by funding agencies and the government, OER awareness remains modest amongst higher education instructors and administrators. It is therefore not surprising that OER adoption rates in Mongolia are low. As a result, a culture around OER engagement has not yet emerged, with only isolated individual educators adopting OER. In contrast with many academics who often worry about the quality of OER, Mongolian educators appear to be more concerned about a particular sub-component of quality, which is relevance. In addition, many study participants expressed reservations about the potential value and utility of OER. ▶

As a country, Mongolia has developed and supported large-scale educational-resource projects, especially at the basic education level, and it may need to take a similar proactive stance regarding OER in the higher education sector if it seeks to improve the quality, relevance and cost-effectiveness of teaching content. As the first study on OER activity in Mongolia's higher education system, this research has value and application for researchers and advocates pursuing an OER agenda, for policy-makers seeking to understand how policy interventions might influence OER adoption in the national and institutional context, and for funding agencies aiming to boost educators' OER engagement more broadly.

Acronyms and abbreviations

ADB	Asian Development Bank
CC	Creative Commons
CHAT	Cultural Historical Activity Theory
DREAM IT	Development Research to Empower All Mongolians through Information and Communications Technologies
GER	gross enrolment ratio
HEI	higher education institution
ICT	information and communication technologies
IDRC	International Development Research Centre
IP	intellectual property
NGO	non-governmental organisation
NUM	National University of Mongolia
OER	Open Educational Resources
ONE	Open Network for Education
ROER4D	Research on Open Educational Resources for Development
SAP	Structural Adjustment Programme

Introduction

As the least densely populated independent country in the world – with a partially nomadic population of three million inhabiting a landmass of 1.6 million square kilometres[1] – Mongolia faces some unique challenges with regard to the provision of high-quality, cost-effective and broadly accessible higher education. These challenges are exacerbated by the increasingly globalised educational landscape where norms and standards are established in wealthy, settled (as opposed to nomadic), densely populated locales. However, the proliferation of information and communication technologies (ICT)-mediated educational innovations offers opportunities for overcoming some of those challenges.

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1   https://www.geolounge.com/country-least-densely-populated/

Open Educational Resources (OER) represent just such an innovation (Boston Consulting Group, 2013; West & Victor, 2011) in that they are materials that are freely available – financially and legally – for anyone to use and share (Butcher, 2011); they can reduce the costs of higher education (Wiley, Green & Soares, 2012); and they can increase the number of students accessing higher education (Daniel, Kanwar & Uvalić-Trumbić, 2006; Orr, Rimini & Van Damme, 2015). However, their utility for educators is predicated on a set of pedagogical assumptions that are new and different in the Mongolian higher education sector. Their value to the system cannot be taken for granted, and thus it is worthwhile to understand what current educators and administrators think about the feasibility of OER in Mongolia. To do so, it is useful to first gain a sense of the cultural–historical context in which those OER would be utilised.

The development and current state of higher education in Mongolia

The development and expansion of formal education in Mongolia is characterised by two distinct phases: the communist era from the 1920s to 1990, and the transition phase from 1990 to the present. It is only in this current phase that OER became an innovation that Mongolian educators could engage with. The cultural and historical elements of the prior phase are, however, important to understand when assessing contemporary educators' decisions around OER, as they continue to influence the present in distinctive ways.

Higher education under Soviet influence (1920s–1990)

After three centuries under Manchu rule (i.e. Qing dynasty of China), and a decade of unsuccessful claims for independence in the 1910s, Mongolia statehood was finally recognised by its newly formed revolutionary neighbour, the Union of Soviet Socialist Republics, in 1924 (Bray, Davaa, Spaulding & Weidman, 1994). The Mongolian leadership embraced communism, leading to the development of a formal education sector that was highly influenced by the political and pedagogical ideals of the Soviet Union. According to Yano (2012, p.10): "The first Constitution, adopted in 1924, proclaimed the right of workers and their children to free and secular education, while ousting the Lama [monastery] schools. In 1933, the first unified curriculum was introduced, based on the curriculum in Soviet schools."

Thereafter, the basic education system grew to reach most members of the population, usually requiring nomadic children in distant locales to attend regional boarding schools (del Rosario, 2005). Education accounted for 14% or more of the national budget, the largest expenditure item in the government fiscus during the communist era (Bray et al., 1994). This high level of investment in education yielded impressive literacy and enrolment results. For instance, by the end of the communist era in 1990, "the adult (aged 15 and over) literacy rate was 96.5 percent, the gross enrolment ratio (GER) for basic education (primary and lower secondary, 8 years) was 98.7 percent, the GER for upper secondary education was 40.1 percent and the GER for tertiary education was 16 percent" (Yano, 2012, p.11).

Additionally, in 1942, a higher education component was established with the founding of the National University of Mongolia (NUM), which gradually expanded over the following decades and spurred the rise of a number of complementary specialist institutes (in the

areas of agriculture, economics, pedagogy, etc.). The new higher education institutions (HEIs) were typically governed by their respective government ministries in a "vertical" fashion (Heyneman, 2004), meaning that "the various ministries had their own universities and produced graduates according to their development plans" (Yano, 2012, p.33). This vertical approach was different from the "horizontal" one of most Western democracies of the time, in which a single department or ministry (i.e. Education) broadly oversaw higher education activities, but allowed the HEIs themselves to flexibly respond to the needs of society and industry (Heyneman, 2004). As Weidman states:

> Mongolia was originally modelled on the Soviet system in which curricula were highly specialized and student places were determined on the basis of projected manpower needs. Universities were primarily teaching institutions, with responsibility for research and the awarding of the highest scientific degrees vested in independent institutes under the Academy of Science. (1995, p.3)

Thus, the cultural–historical foundations of Mongolia's higher education system were ideologically Marxist–Leninist, politically communist, administratively centralised, vertical and financially free to all students. However, with the fall of the Soviet Union – and the withdrawal of its economic support, amounting to a massive 30% of national gross domestic product at times (Bray et al., 1994) – Mongolians began to reappraise the viability of these foundations as the country embarked on the challenging political and economic transition which started in the early 1990s.

Higher education after the post-communist transition (1990–present)

With the formal collapse of the Soviet Union in 1991, Mongolia went through a peaceful political transition after which a multiparty system, a new constitution and a market economy were introduced. However, after decades of financial and technical reliance on the Soviet state, Mongolia remained undercapacitated to meet the new challenges it faced, and an economic crisis – characterised by rising inflation and unemployment (almost unheard of previously) and declining outputs – engulfed the country, similar to other post-communist states at the time (Bray et al., 1994).

Structural adjustment and financing

As many of the Soviet advisors and technicians departed Mongolia (Bray et al., 1994), the World Bank, along with other Western institutional brokers and funders,[2] moved in and suggested that the country embark on a series of structural adjustment programmes (SAPs) that would liberalise the economy and open it up to new investment and growth potential. According to Weidman (1995, pp.1–2), post-communist governments at the time were

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2   Some international funders focused more on education support than the World Bank, which focused more on infrastructure and economic reform. According to Steiner-Khamsi and Stolpe (2004, p.34): "The Asian Development Bank (ADB), the Japanese International Cooperation Agency, the Soros Foundation (Mongolian Foundation for Open Society) and the Danish International Development Assistance (DANIDA) have been, thus far, the most significant contributors to education sector reform in Mongolia. The United Nations organizations, specifically the United Nations Educational, Scientific, and Cultural Organization and the United Nations Children's Fund, have contributed less on budget, but have been influential at the governmental level."

"encouraged to identify those sectors of their economies in which there are possibilities for 'cost sharing', namely, shifting greater portions of the burden of payment to the individuals who are the recipients or users of the services provided" (see also Altbach, 2004).

This included making adjustments to higher education, "a service that is both very expensive to provide and from which recipients can expect to receive significant financial benefits" (Weidman, 1995, p.6). The menu of SAP cost-sharing strategies in higher education, according to Weidman (1995), consisted of:

1. Direct cost recovery: charging student fees; eliminating student stipends.
2. Contracts and agreements with private- and public-sector agencies: sponsoring students; obtaining contracts for consulting services; paying for student internships.
3. Income-producing enterprises: renting out space; providing copying services; running bookstores; and, in Mongolia's context specifically, managing livestock herds.
4. Private contributions and endowments: soliciting gifts from alumni and donors.
5. Student employment and national service scholarships: offering work-study options; providing scholarships for national service.
6. Deferred cost recovery: taxing future earnings of graduates; taxing private-sector employers; granting student loans.
7. Expanding the private sector: opening up private HEI opportunities.

With this advice in mind, the Mongolian government quickly introduced fees for higher education students, removed most government stipends, initiated consultancy work for the universities, started managing livestock herds for income generation, offered students loans to cover the newly demanded tuition fees and opened up higher education provision to private enterprises (Weidman, 1995). However, perhaps because the government had no prior experience in this type of neoliberal "cost sharing" in the education field, its efforts led to some surprising results. For instance, the government started charging student fees at a rate meant to recover all variable (as opposed to fixed) institutional costs (such as educator salaries), something virtually unheard of even in public education contexts of developed countries where student fees were meant to cover only a portion of variable costs. As Bray et al. summed up at the time: "In the early 1990s Mongolia may have lurched from a rather extreme model of socialism to a rather extreme model of capitalism" (1994, p.41).

Massification and privatisation

As the country opened its doors to the global economy, it also opened the doors of higher learning far wider than was the case previously. In 1985 there were just eight HEIs with 24 600 students; by 1993 there were 23 new operational HEIs (Bray et al., 1994), and by 2014 there were 100 HEIs (16 state-owned, 79 private and five foreign HEI branches) with a total student enrolment of 174 000 (MECSM, 2015), primarily based in the capital city, Ulaanbaatar. Moreover, the country's higher education GER increased from 14% in 1991 to 47% in 2009.

This "massification" of higher education led to predictable logistical and infrastructural pressures, similar to those faced in other Asian and post-communist states at the time (Altbach, 2004), but it also led to increased differentiation within the sector in terms of the quality and relevance of the education offered. While graduate throughput increased, it has not always been clear whether the education students received was relevant for a modern workforce or whether the current economy could absorb these increased numbers of higher education graduates. This has led to a paradox where there were not enough *appropriately* skilled graduates in the Mongolian workforce to meet society's current needs (World Bank, 2007). Yano (2012) calls these Mongolian graduates who find themselves working in ill-suited jobs the "overeducated".

Quality and relevance

The drop in perceived and actual quality of higher education in Mongolia is hotly debated in society, and has been noticed by the funders that have, in many ways, pushed for the changes that have occurred. Thus, the Asian Development Bank (ADB), one of the most significant funders (in terms of scale and policy influence) of higher education in the country, has noted that:

> Mongolian HEIs suffer in comparison with foreign universities. Issues relating to quality of higher education include (i) proliferation of small private HEIs without quality control; (ii) weak overall system of quality assurance and accreditation; (iii) inadequate recruitment practices and supply of teaching staff; (iv) irregular application of norms for workload, contact hours, and research time; (v) inadequate monitoring of the performance of staff; (vi) lack of a national study credit and levels framework; (vii) inadequate curricula, learning materials, facilities, and equipment; (viii) low research capability and inadequate research facilities; and (ix) weak networks and partnerships with regional and international universities. (ADB, 2011a, p.3)

Gender and rural–urban imbalances

The vast economic changes that reshaped the country more broadly also exacerbated certain divisions that were becoming noticeable towards the end of the communist period. For instance, just after the beginning of the transition, Bray et al. (1994) noted that females outnumbered males in higher education, at least since the early 1990s, while the male dropout rate had increased (del Rosario, 2005). According to the Mongolian government, there were 174 000 higher education students in 2014, of whom 101 800 (59%) were female (MECSM, 2015). This "reverse gender imbalance" (Adiya, 2010) reflects, in part, education's role in Mongolian society – while it is considered very important by every family, it coexists alongside more traditional priorities of animal husbandry, which tends to be a more male-dominated occupation. Thus, this gender disparity in higher education does not signify the realisation of post-patriarchal society (Begzsuren & Dolgion, 2014), nor does it mean that males are being structurally disadvantaged in some way. Instead, it reveals that education in a country which still has a large nomadic population that makes its livelihood from livestock herding is just one of a number of priorities for families. The prestige and

wealth opportunities of the nomadic lifestyle remain attractive for many, while the growing educational options offer unique possibilities, especially for females who do not enjoy the same opportunities and authority granted to males in nomadic society (Adiya, 2010).

This gender imbalance is linked to a significant rural–urban divide, in which students living in cities, especially the capital, are privileged in their access to educational opportunities. For students who live nearby to HEIs, such as those in Ulaanbaatar, it is cheaper to enrol because the institutions do not have to provide them with accommodation. Students in the cities are also better able to select the best institution according to their needs compared to their rural counterparts for whom the choices may seem opaque (Bray et al., 1994).

Language

Throughout their history, Mongolians have been practical about language issues, even though they prefer to speak their own language amongst themselves. In centuries past, when the empire of Genghis Khan spread across Eurasia, the Mongol leaders of the time did not attempt to impose their own language on the multitudes of subject populations, but rather adopted the languages of the ruled wherever they were (Chua, 2007). More recently, under Soviet influence, Russian-language textbooks (some of which had been localised to the Mongolian context) were actively used in higher education, even though the Mongolian language remained relevant in the classroom. During the transition, the government opened up opportunities for students to learn either Russian or English as their preferred second language. English emerged as the overwhelming choice for students, even though there were far fewer competent teachers of English compared to Russian at the time. The government gave policy and financial support for this choice (with aid from the donor community), also recognising in the early 2000s that English was the preeminent language of international business, education and tourism (Cohen, 2004).

Since the transition, the integration of English into education and everyday life has taken place to the extent that a form of "Mongolian English" has emerged, which "serves as a language of communication in many instances, and influences the acquisition and general use of the language in the country" (Cohen, 2004, p.15). Marzluf (2012) goes so far as to argue that a "post-socialist English" – associated with the values of transnational development, neoliberal economic policies and post-industrial educational practices – has supplanted "socialist Russian" and is now engaged in a dynamic relationship with a "fundamentalist nationalist Mongolian" which is associated with traditional, rural nomadic values. This suggests that Mongolians do not view English as a neutral linguistic tool for practical use, but are attuned to the political and social implications of embracing it as a second language. Perhaps this is most relevant for young people, especially students, who are engaging in translingual experimentation with English and Mongolian, the Roman and Cyrillic alphabets, and linguistically based forms of identity claims and performance (Dovchin, 2011, 2015; Dovchin, Sultana & Pennycook, 2015, 2016; Sultana, Dovchin & Pennycook, 2013).

Structural reform

According to the ADB, which has conducted a large-scale and influential review of the Mongolian higher education sector:

> A new 12-year education structure was introduced into schools in September 2008 with the aim of bringing Mongolia closer to international standards and norms. Tertiary education was offered in three general types of institutions: (i) universities with full four-year degree and postgraduate programs, (ii) colleges with four-year degree programs only, and (iii) technical and vocational schools (TVET) with two-year training programs. (2011a, p.1)

However, the rapid increase in the number of public and private HEIs since 1991 has been largely uncontrolled. Only about half of private HEIs have been accredited, and governance, management and financing of higher education have not kept pace with the rapid growth of the higher education sector. This led the government to initiate a process of consolidating public HEIs in January 2010 with the aim of concentrating educational resources in fewer, higher-quality and better managed public HEIs (ADB, 2011b).

Governance and management

As can be seen from the discussion above, the higher education sector transformed quite rapidly in a short period as a result of the government's responsiveness to both donors' demands for structural adjustment as well as those of more indigenous forces, such as Mongolians' demand for greater access to higher education. However, some features of the communist era appeared to remain stubbornly persistent.

For instance, according to Steiner-Khamsi and Stolpe (2004), all of this "policy borrowing" – especially in the sphere of higher education governance – was more of a strategic mechanism to secure international funding than a genuine attempt to reshape higher education according to the wishes of the funders. They argue that: "Once policies were borrowed from elsewhere and funding was approved to implement them locally, projects sailed under different objectives" (2004, p.29). The new policies were "Mongolised" according to a locally relevant sociologic that masked administrative and power structures which often resembled the old centralised Soviet model of operation more closely than the new decentralised structures that were called for in the funders' policy prescriptions. Essentially, in many cases "educational policies [were] only borrowed or imported at a discursive level with little or limited impact on educational practice" (2004, p.30). These authors trace the history of this policy borrowing during the first decade of the transition and find that the policy commitments made concerning de/centralisation "swung like a pendulum" depending on whether they were conditional for new funding from international donors:

> In times of heightened international pressure – usually in periods preceding either an appraisal for or an agreement on a new loan – the Ministry of Education has subscribed to a comprehensive decentralization programme. Upon approval of international cooperation projects, however, the Ministry of Education has shifted its emphasis and has retained its strongly centralized system of planning, monitoring and governance. (Steiner-Khamsi & Stolpe, 2004, p.36)

The key reason they offer for this is that Mongolian officials had a different understanding from international donors as to who should govern education. For the officials, "the education system needs to be administered by state representatives rather than professionals" because, in their estimation, schools and universities are "state" institutions, not "public" ones, as the donors believe (Steiner-Khamsi & Stolpe, 2004). This has led to consistent misunderstanding between these parties regarding the best way forward for education with respect to governance, a fact which Mongolians appear to "massage" with shifting policy statements that appease donors, secure funding and allow the centralised management to largely continue functioning as it did under Soviet patronage.

Thus, under these conditions of dramatic economic change and surprising administrative resilience, the higher education sector faces a host of new challenges that it did not face prior to the transition. As a result, the cultural–historical foundations of Mongolia's higher education system have shifted in crucial ways, though the legacy of the communist era remains influential in unexpected ways. While the higher education sector was previously ideologically Marxist–Leninist, it has moved to a more neoliberal stance in line with funders' desires. Politically, it is no longer communist, but shaped by more democratic and private enterprise interests. Linguistically, it used to be influenced by the Russian language. However, English has rapidly been replacing Russian as a second language, while Mongolian remains the preferred language of interaction for students and educators. Administratively, higher education governance used to be centralised and vertical, and while there have been consistent calls for decentralisation by funders, the state has only partially acceded to this demand. Public higher education remains largely centralised, but private HEIs enjoy a degree of decentralised autonomy (which many say has resulted in a decline in quality) (Steiner-Khamsi & Stolpe, 2004). Lastly, higher education used to be free for all students under the communist regime. This is no longer the case. Indeed, of all the changes that have occurred since the transition, this has perhaps been the most dramatic, with students having to shoulder relatively high education costs, even at public HEIs.

The introduction of OER in Mongolia

It was in the context described above, from 2010 to 2014, that Mongolia hosted a series of national forums, workshops and pilot projects on OER. These activities included annual national events introducing the concept of Open Education and included educators and researchers across education sectors. The events were typically driven by international advocacy groups to help build a critical mass of support for open practice in the country and move toward the establishment of a Creative Commons Mongolia affiliate organisation, which was established in 2014.[3]

Starting in 2010, the Development Research to Empower All Mongolians through Information and Communications Technologies (DREAM IT)[4] project brought consulting expertise from Canada to Mongolia to introduce models of educational practice associated

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3   http://creativecommons.mn/
4   DREAM IT is a project of Canada's International Development Research Centre (IDRC), which has been active as a funder in Mongolia for over 20 years, investing in information and communication technology (ICT) research through its ICT for Development programme, and more recently through its Information Networks programme. See https://www.idrc.ca/en/project/development-research-empower-all-mongolians-through-information-communication-technology.

with OER. The consulting visits were also designed to stimulate local interest in OER research projects in Mongolia, with a focus on exploring and investigating potentially transformative education strategies for the country (Baasansuren & Porter, 2013).

A national seminar on OER supported by DREAM IT and Canada's International Development Research Centre (IDRC) was held in Ulaanbaatar in October 2010. It introduced Mongolian educators and government officials to OER projects worldwide and provided opportunities for in-depth discussion about the merits and mechanics of Open Education principles and practices. In 2011, a follow-up workshop on Open Data, open government and OER was held, in which research projects funded by the IDRC through DREAM IT presented preliminary research results and demonstrated materials that each would share as OER using Creative Commons (CC) licences. Up until 2013 when it was completed, the DREAM IT project had been active in capacity-building initiatives to introduce and demonstrate a range of open practices in the Mongolian education sectors.

As a result, for example, Davalgaa.mn ("Education Wave"), a non-governmental organisation (NGO) that was funded through DREAM IT to research the development of an open training and materials development strategy for preschool teachers, presented its work at the national seminar and launched a book that it had developed separately with a publisher partner. Davalgaa made the book chapters openly available to teachers, parents and the public through its website using a CC licence.[5] It has also experimented with user-generated and CC-licensed videos produced by preschool teachers that can be viewed or downloaded from its website along with other openly licensed resources designed for preschool educators.

In 2014, the Mongolian parliament adopted a National OER Program[6] to be implemented by the Ministry of Education, Science and Culture and the Open Network for Education (ONE) Foundation of Mongolia,[7] which was established by OER activists previously involved with DREAM IT. The National OER Program has several components – including the ONE Academy for supporting open collaborative work, the development of an open university and the development of policies that allow educators to release their materials openly – to be implemented in the period 2014–2024. Initial priorities have been to localise Khan Academy[8] videos and create a Mongolian vocabulary wiki.[9] The state funding for the programme was about MNT 1 billion (USD 500 000) for 2014–2016. However, it is unclear whether the budget will support the programme after the change of political leadership as a result of the parliamentary election in June 2016.

Yet, despite this and direct action research in the preschool education sector (Davalgaa, 2013; Grunfeld & Hoon, 2013; Norjkhorloo & Porter, 2013), no significant activity has yet occurred regarding OER adoption in Mongolia's higher education sector, a fact explored in detail below. This situation is in contrast to the reported extent of OER activity in higher education in other parts of the world, including the Asian region (Dhanarajan & Porter, 2013). Thus, it remains to be seen whether OER will grow beyond its currently narrow uptake base in Mongolia's higher education sector.

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5   http://davalgaa.mn/
6   http://bit.ly/2pX9kHv
7   http://one.mn
8   https://mn.khanacademy.org/
9   http://www.wikitoli.mn/

Research rationale and scope

This chapter reports on an exploratory research project which investigated the strategies and practices of educators from six HEIs in Mongolia in order to understand the role of OER in their work. Specifically, the chapter explores activities in academic workplace settings representing different organisational structures within the higher education domain where instructional development, teaching and learning take place. Participating institutions included four public and two private universities.

The intention of the study is to assess the cultural–historical factors that shape OER activities – and potential for further OER adoption – in Mongolia's higher education sector, in order to determine whether OER has the potential to move beyond a niche innovation advocated and funded by international donors to one that is broadly adopted, implemented and disseminated by local educators. As noted, this is the first study of OER activity in Mongolia's higher education system.

Methodology

This study used research methods, data collection strategies and interpretative frameworks that were appropriate for addressing research questions in a cultural–historical context. Because of the ability to address emergent contexts where pragmatic, grounded, iterative, interactive and flexible approaches are required, the frameworks, methodologies and approaches considered most appropriate for a study in this domain of practice included case study models (Yin, 2014), mixed methods (Creswell, 2014) and qualitative surveys (Jansen, 2010).

The study employed a sequential exploratory model (Cresswell, 2014) in which qualitative interviews comprised the first stage of data collection, followed by quantitative surveys. The interview data were reviewed and assessed and then used to refine the survey instrument that was employed.

Qualitative interviews

Qualitative interviews were conducted with 14 participants who were recruited using a sample of convenience from four Mongolian HEIs (NUM, Mongolian University of Science and Technics, Health Sciences University and Mongolian National University), two government organisations and three NGOs. A recruitment notice was sent out by email and participants volunteered to be interviewed. A total of eight educators and six administrators were interviewed for 30–40 minutes each.

A set of interview questions was developed to explore the beliefs, understandings and contexts underpinning OER use and potential in Mongolia. Based on key issues identified in a reading of the OER literature, the interview questions revolved around the following themes: **OER awareness**, as this can have a massive influence on whether OER is used or not (Allen & Seaman, 2014; Hatakka, 2009; Reed, 2012; Rolfe, 2012); **infrastructural accessibility**, because this is the foundation upon which OER activities take place (Bateman, 2006; Clements & Pawlowski, 2012; Dhanarajan & Abeydawara, 2013); **organisational culture**,

as this may shape educators' choices around OER (Karunanayaka, Naidu, Dhanapala, Gonsalkorala & Ariyaratne, 2014); **institutional policy**, because this influences whether educators are allowed to engage with OER and whether they are rewarded or recognised for doing so (Cox & Trotter, 2017; Fitzgerald & Hashim, 2012; Flor, 2013; Tynan & James, 2013); **quality concerns**, because educators are reluctant to introduce new elements that might compromise the quality of their teaching (Clements & Pawlowski, 2012; Jung, Wong, Li, Baigaltugs & Belawati, 2011; Willems & Bossu, 2012); **pedagogical practices**, as these shape the type of engagement that educators may have with OER (Davis et al., 2010; Santos-Hermosa, 2014); and **OER value and utility**, as this judgement will determine whether OER become sustainable features of an education system or not (McGill, Falconer, Dempster, Littlejohn & Beetham, 2013; Pegler, 2012).

The questionnaire design process resulted in the following interview questions, listed according to their associated theme:

Awareness
What understanding of "open" practices and OER do you currently hold?
Where were you first introduced to OER: workshops, presentations or colleagues?

Access
To what degree does established technical infrastructure and support affect the potential for OER reuse in institutional settings?

Culture
What issues of organisational culture are associated with collaboration and sharing of OER among educators?

Policy
What business rules and organisational policies have been shown to directly affect OER opportunities?

Practices
What important practices and issues are entailed in the use, revision (translation), remixing, redistribution and retention[10] of OER for use in specific localised contexts in HEI settings and programmes?

Quality
What quality assurance processes and issues affect the adoption and reuse of open resources?

Value and utility
How do you see OER benefiting the Mongolian educational system, your institution or students?

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10 http://opencontent.org/blog/archives/3251

Quantitative surveys

After assessing the responses of the qualitative interviews (n = 14), a follow-up survey was conducted with 42 instructors and administrators at six HEIs (see Appendix 1).[11] The survey was sent to 74 potential respondents representing the broader higher education sector in Mongolia, including lecturers, administrators, researchers and librarians. The survey approach was a form of convenience sampling. It followed the guidelines and process recommendations for sequential exploratory research design (Creswell, 2014), helped to elaborate, enhance and clarify the interview data, and extended understanding of the cultural–historical enablers and barriers to OER use for participants.

On the basis of the interviews – as well as through participation in a Research on Open Educational Resources for Development (ROER4D) research question harmonisation process[12] that encouraged the researcher to try to develop questions that could be compared to those from other OER surveys (CERI/OECD, 2007; Masterman & Wild, 2011; OERAsia, 2010; OER Hub, 2014) – the survey instrument was assessed, refined and ultimately implemented in September 2015. It was conducted both online (with the Google survey tool) and in paper-based format, depending on the desires of the respondents. Forty-two respondents (n = 42) completed the survey by the end of December 2015.

As shown below, questions 1–12 of the survey collected demographic and contextual data consistent with other investigations carried out as part of the ROER4D project.[13] Questions 13–34 collected data from participants about their knowledge of OER, their experiences of using OER and their experiences as developers of educational resources for use in their teaching, including any barriers they encountered. The survey also used "skip logic", which means that respondents answered questions based on their responses to previous questions. This section of the survey was deemed crucial because of its relationship to emergent themes from the interview process. The survey questions focused on obtaining data on the following items:

Interviewee demographics
1. Gender
2. Age
3. Discipline
4. Position at HEI
5. Years of teaching experience
6. Highest education qualification

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11 http://dx.doi.org/10.5281/zenodo.815430
12 http://roer4d.org/892
13 ibid.

Internet access

    7. Location of internet access
    8. Devices used for internet access
    9. Ownership of devices used to access the internet
    10. Type of internet connection (broadband, dial-up, etc.)
    11. Internet speeds available
    12. Internet restrictions

Awareness of OER

    13. Duration of awareness of OER concept
    14. Resources you would feel free to use for teaching without worrying about copyright or licensing
    15. Source of first exposure to OER concept
    16. Institutional OER initiatives
    17. Location of OER sources
    18. Duration of awareness of alternative intellectual property (IP) mechanisms

Use of OER

    19. Use of OER in teaching
    20. Reasons for not using OER
    21. Site of OER access
    22. Use of OER "as is"
    23. Use of "revised" OER
    24. Frequency of combining/remixing OER
    25. Assessing source of OER
    26. Goals sought in using OER
    27. Level of OER success
    28. Reasons for lack of success
    29. Reasons for success

Creating and sharing educational materials

    30. Creating OER
    31. Why not creating OER
    32. Means of sharing OER
    33. Motivations for creating OER
    34. Barriers for creating OER

Data analysis

Based on the interview analysis, thematic analysis and coding (Boyatzis, 1998; Saldana, 2012) was undertaken in Excel. The semi-structured design of the interviews provided an opportunity for new topics and themes to emerge from the participant perspectives. Key findings from interview data were clustered thematically.

Quantitative data collected from closed-ended survey items were analysed using descriptive methods that report frequencies and measures of central tendency for the

responses given by participants. The survey also collected data on multiple variables, including age, gender, position, discipline and experience, which might provide further opportunity to study the relationship between these various demographic variables and OER use, an analytical approach that has been found to be useful in a number of other OER survey studies (Commonwealth of Learning, 2016; de Oliveira Neto, Pete, Daryono & Cartmill, 2017; Masterman & Wild, 2011; OER Hub, 2014).

Analytical framework

This study utilised Cultural Historical Activity Theory (CHAT) (Engeström, 2001; Engeström & Sannino, 2010) as an analytical framework. Other Open researchers have noted that CHAT can provide insight into real-world activity systems in operation (including HEIs), particularly for investigations of situated practices using qualitative interviews (Trotter, Kell, Willmers, Gray & King, 2014).

CHAT provides a framework for analysing instructors' and administrators' actions towards achieving a specified *object* (goal) as mediated by *tools* (social and physical technologies), *rules* (formal policies, laws and implicit norms), *communities* and *divisions of labour*. The "CHAT triangle", as refined by Engeström (2001) (see Figure 1), visually represents the relationship between these "nodes" of the activity system, encouraging the researcher to identify "contradictions" that inhibit subjects' attainment of the object and outcome. Essentially, by ascertaining the relevant characteristics of each node in an activity system, and then assessing how they interact with each other, it is possible to find where there is a breakdown (or contradiction) in a linkage. For instance, if educators do not have access to the necessary tools (computers, internet, etc.) to use or create OER, then the linkage between the subject and tools node is "broken", creating a contradiction in the overall ecosystem. By identifying and addressing these contradictions through successive iterations, gradual progress can be made in attaining the desired object. This chapter seeks to do just that, especially by keeping in mind the cultural–historical elements that influence the character of the nodes and how they are linked.
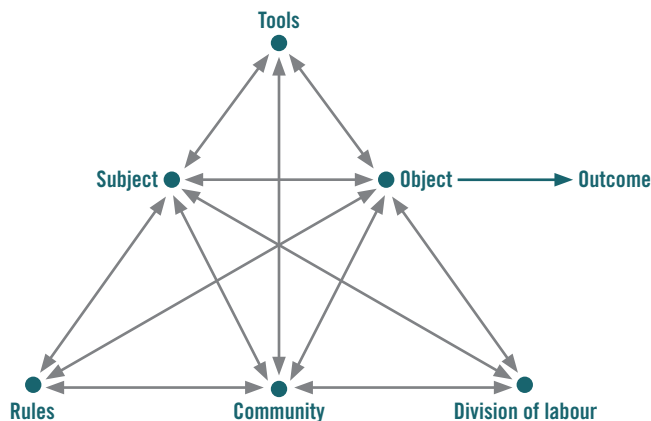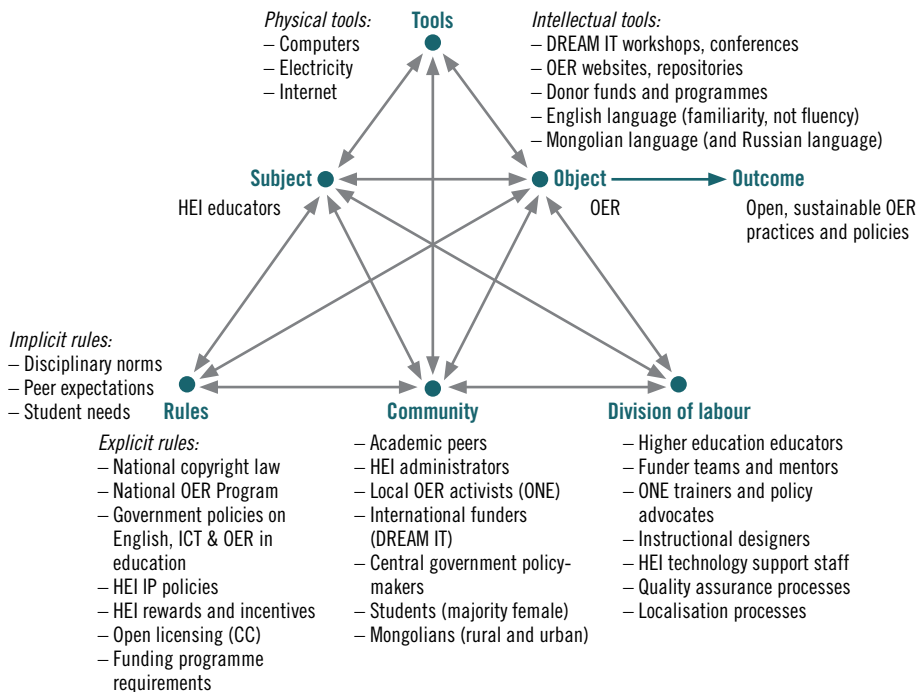

Figure 1: **Representation of an activity system in the CHAT tradition (Source: Engeström, 2001)**

Findings

In this section, we assess the results of the interviews and surveys according to the themes identified in the literature and which structured the research instruments: awareness, access, culture, policy, practices, quality and value (utility). We do this in light of the cultural–historical elements that shape the higher education activity system with regards to OER, seeking to grasp where any contradictions or obstacles may reside in potential OER engagement.

The Mongolian higher education activity system

Before discussing the findings from the interviews and surveys, it is useful to visualise Mongolia's higher education system – with regard to OER engagement – in the context of a CHAT triangle (Figure 2). This consolidates the information from the Introduction on the cultural–historical elements shaping Mongolian higher education in general (e.g. language, finance, laws, gender, urban/rural divide, etc.), and includes the specific elements that pertain to the more recent introduction of OER to the country (e.g. OER funding, etc.). With this conceptual framework in mind, we will be able to gain better insights into the opportunities and obstacles for OER in Mongolia.

Physical tools:
– Computers
– Electricity
– Internet

Tools

Intellectual tools:
– DREAM IT workshops, conferences
– OER websites, repositories
– Donor funds and programmes
– English language (familiarity, not fluency)
– Mongolian language (and Russian language)

Subject
HEI educators

Object
OER

Outcome
Open, sustainable OER practices and policies

Implicit rules:
– Disciplinary norms
– Peer expectations
– Student needs

Rules

Explicit rules:
– National copyright law
– National OER Program
– Government policies on English, ICT & OER in education
– HEI IP policies
– HEI rewards and incentives
– Open licensing (CC)
– Funding programme requirements

Community
– Academic peers
– HEI administrators
– Local OER activists (ONE)
– International funders (DREAM IT)
– Central government policy-makers
– Students (majority female)
– Mongolians (rural and urban)

Division of labour
– Higher education educators
– Funder teams and mentors
– ONE trainers and policy advocates
– Instructional designers
– HEI technology support staff
– Quality assurance processes
– Localisation processes

Figure 2: Mongolian higher education sector activity system as related to OER

Focused on Mongolian HEI educators who have the (hypothetical or real) object of using and/or creating OER for the purposes of developing open, sustainable OER practices and policies (as shown across the middle horizontal zone), Figure 2 shows how the various other nodes above and below mediate educator activity.

At the top of the triangle, activity related to tools are mediated by the usual physical tools that are necessary for OER access and engagement: computers, electricity and the internet. There are, however, also intellectual tools that mediate activity pertaining particularly to the Mongolian context, such as the OER awareness-raising efforts (workshops and conferences) of the donor community, growing national familiarity and use of the English language, the decline of Russian as a second language, and the continued ubiquity and relevance of Mongolian for educators and students.

Along the bottom axis, rules (implicit and formal or explicit) also mediate educator activity. The implicit rules comprise educators' disciplinary norms around OER engagement (and "openness" in general), peer expectations within a department about sharing behaviour and student desires for accessible, low-cost materials. The formal rules are those established by the central government (such as the national copyright law); the National OER Program, and various policies pertaining to the use of English, ICTs and OER in education; the institution, such as their relevant IP policies and rewards and incentive structures; alternative licensing bodies, such as CC with its open licence parameters; and donor funders, which place their own requirements on those who accept funding for OER work.

Educator activity is also mediated by the broader community in which the educators exist, comprising academic peers at their institutions (and beyond), institutional managers and administrators, international OER funders, local OER activists (such as ONE), central government policy-makers, students (the majority of whom are female) and the Mongolian public at large (which is bifurcated according to differentiated urban and rural opportunities).

Lastly, educator activity is mediated by the division of labour that exists around OER. Educators play a central role in seeking, finding, using, revising, remixing and creating OER, but they often also rely, to some extent, on international funder teams and mentors, trainers and policy advocates, instructional designers, technology support staff, as well as on quality assurance and localisation processes.

With the details of the activity system now clear, we can assess the data from the interviews and surveys to better understand how the Mongolian higher education system functions – or fails to function – in achieving desired OER goals and outcomes.

Awareness

International donors have been attempting to raise awareness around OER and openness in the country since 2010. To what extent can we say that these efforts have been successful?

In total, as depicted in Figure 3, 57% of the Mongolian educators and administrators surveyed for this study revealed that they had some level of awareness about the OER concept, while 43% said that they did not have any awareness prior to the study (Appendix 1, Q.13).

Of those who had some prior awareness, 19% had known about OER for 5–10 years, 14% had known for between two and five years, 19% had known for one to two years, and 4% had known for just less than one year (Figure 3). This suggests that there is a small core of educators and administrators who have known about OER for some time, but most would have become acquainted with the concept since 2010, perhaps partly due to the awareness-raising efforts of various donor projects. Yet, a sizeable minority had still not

heard of OER prior to this study, which suggests that it is not yet a mainstream educational innovation in Mongolia.
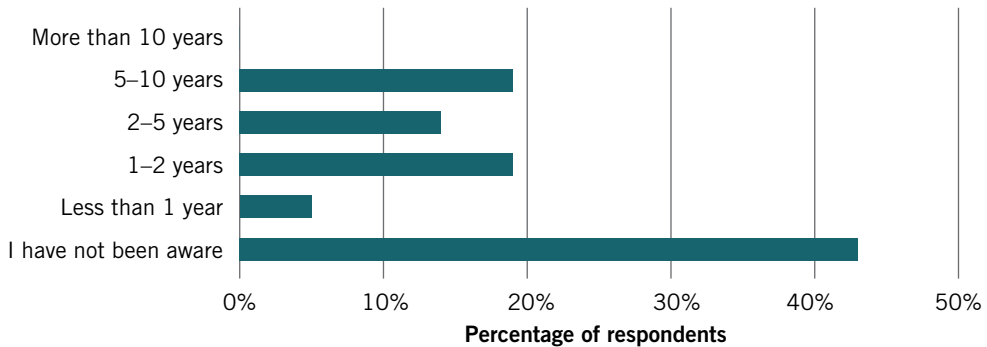
Figure 3: **Period for which respondents have had knowledge of OER concept**

For those who were aware of OER prior to the study (Figure 4) (Appendix 1, Q.15), 24% of respondents noted that their colleagues were the primary source of knowledge about OER, followed by 10% from academic journals and/or newspaper articles, 10% via initiatives in other institutions, 5% from initiatives within the educators' own institution and 5% from the internet.
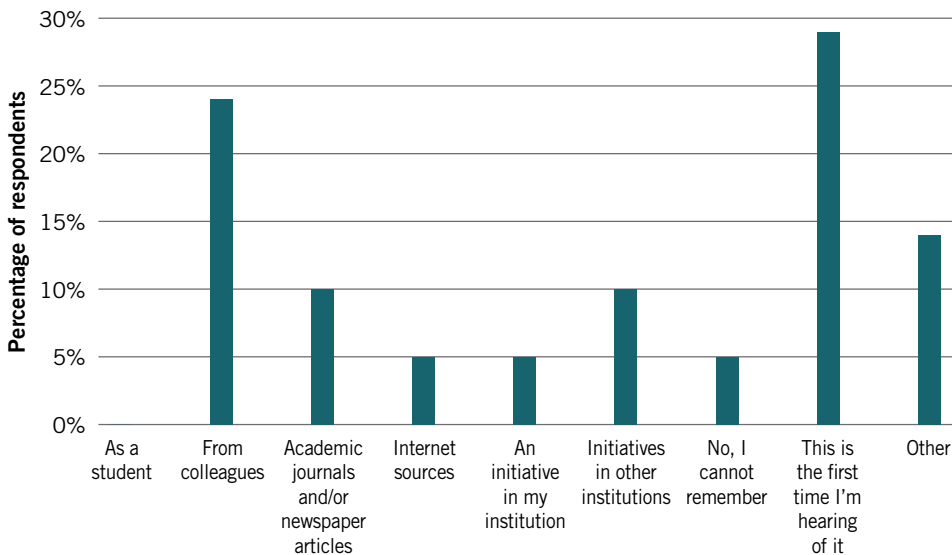
Figure 4: **Sources of knowledge about OER reported by survey participants**

Interview respondents also mentioned that the IDRC supported a series of seminars and workshops on OER held between 2011 and 2013, where they first became aware of OER.

To sum up the local perspective, according to the founder of the ONE Mongolia Foundation (one of the study's interviewees): "Many people know about OER, but practical use is very limited in Mongolia. We need a lot of investment to develop OER at its early stage. Several years have to be spent for awareness-raising of OER."

From a CHAT perspective, Mongolia's higher education activity system bears the traces of some mild recent donor-led OER activity which has helped raise awareness in the country. However, these workshops and programmes are just a few of many that are aimed at reforming Mongolia's education sector. They would therefore not be of the type to raise awareness to a level that permeates the entire sector. However, as the data show, educators have also gradually learned about OER through colleagues, journals and searching the internet, representing a certain measure of organic expansion of the idea. For the activity system to operate optimally in delivering OER outcomes, however, it will require a far higher level of awareness amongst educators and administrators than is currently present, as noted in research in other countries (Allen & Seaman, 2014; Hatakka, 2009; Reed, 2012; Rolfe, 2012).

Access

Access is a key educational challenge in the Global South (Bateman, 2006; Clements & Pawlowski, 2012; Dhanarajan & Abeydawara, 2013) and forms an integral component of the interview and survey questions. Essentially, are OER accessible for Mongolian educators, given the character of their infrastructural and linguistic contexts? On the CHAT triangle, this is largely covered by the top "tools" node, which distinguishes between physical and intellectual tools.

While Mongolia is still a developing country, most educators in the higher education sector appear to have access to the requisite technological infrastructure – computers, electricity and the internet – for engaging with OER. The majority (57%) of survey respondents own their own laptops, though many also use the desktop computers provided by their HEIs (Appendix 1, Q.9). Most connect to the internet at work (81%) and/or home (76%) (Appendix 1, Q.7/8) at speeds that they describe primarily as "medium" (52%) or "fast" (29–33%) (Appendix 1, Q.11). None said that there were any institutional access restrictions placed on their internet use (Appendix 1, Q.12). Thus, even though a small 9% said that they "do not have access to OER", it is not clear whether this is due to infrastructural access reasons or something else (Appendix 1, Q.20). It may be due to the intellectual tools that are also required to access OER.

As the CHAT triangle shows (Figure 2), while some of these tools pertain mostly to OER awareness (workshops, etc.), the linguistic tools – of English language familiarity (though not necessarily fluency) in a Mongolian language context that also retains the legacy of broad Russian language facility – will shape the type of access that many Mongolian educators have to OER because so many of them are based in English. With the country's move to greater English usage in higher education, this is both valuable and challenging. With Mongolians' familiarity with English, most OER are accessible to them in a basic sense. At a minimum, they are intelligible for both educators and students. However, since most OER are also developed in foreign countries – especially in Europe and North America – the concepts, examples and focus of the materials may not always be appropriate or useful for Mongolians. This suggests that, while most OER are technically and linguistically accessible in this context, they are not automatically relevant (discussed below in the Quality section) or valuable (discussed under Value and Utility).

Culture

Extending the linguistic focus more widely, culture can also have a powerful influence on whether educators adopt OER (Karunanayaka et al., 2014). On the CHAT triangle (Figure 2), this element is spread across the nodes of the bottom horizontal: rules (informal), community and division of labour.

The informal rules that mediate educator activity are those of disciplinary norms (the common practices in one's academic field), peer expectations (the social and collegial forces expressed in a department, in a faculty or by virtually-connected colleagues) and student needs (for access to low-cost, high-quality learning materials). As noted above, educators' work environment was a major factor for how many (24%) first learned about the concept of OER "from colleagues". Other educators are also key sources of information about where to look for OER, according to 29% of survey respondents, complementing another 19% who said that departmental/institutional meetings were useful for gaining OER information (Appendix 1, Q.17).

These informal rules go beyond knowledge acquisition to actual pedagogical practice. Of the 76% of survey respondents who said that they had never created and shared OER (Appendix 1, Q.30), the highest percentage of them (25%) said that they had not done so because "such sharing is not common in my discipline" (Appendix 1, Q.31). This suggests that many Mongolian educators look to their peers, both locally and internationally, to guide their activities to some extent. The fact that OER adoption is not yet a global norm[14] means that, as yet, the academic community does not provide the kind of positive pressure on Mongolians that is necessary to engage with OER at a broad level. Essentially, there is not yet a strong "culture of contribution" (Atkins, Brown & Hammond, 2007).

This notion is reinforced when assessing the activities of those in the "community" node of the CHAT triangle. The first group – international funders – played a key initial role in promoting OER, raising awareness and spurring mild uptake of OER by educators. Government policy-makers have taken this a step further with the establishment of the National OER Program (2014–2024). While much of this programme is aimed at the primary and secondary education sectors, the ONE Foundation, which is assisting in the implementation of the programme, has a broader mandate, including a focus on other higher education activity. But this diverse set of community groups is far from having a common approach to OER, even if many (rural students, male dropouts) would benefit from greater awareness and access to them. Thus, this appears to be an incipient "OER community", one that is currently more of a traditional "education community" but which is developing some nascent open-related characteristics. Building an OER ethic into this community will take some time, but the government's commitment to OER at national level gives crucial support to this possibility.

Thus, from a CHAT perspective, culture does not present an insurmountable obstacle to OER use or creation, but currently inhibits the full potential of this activity system in terms of adopting OER.

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14 http://er.educause.edu/articles/2013/2/ten-years-later-why-open-educational-resources-have-not-noticeably-affected-higher-education-and-why-we-should-care

Policy

Focusing on the formal element of the rules node of the triangle, there are a number of relevant laws and policies that mediate (potential) OER activity. At the national level, section 17 of Mongolia's Copyright Law states that:

> 17.1. The author of a work created in the course of execution of his/her duties shall enjoy non-economic intangible rights.
> 17.2. The employer may have the exclusive rights over the exploitation of the work created as part of the exercise of official duties if not otherwise stipulated in the contract. (Government of Mongolia, 2006)

Read in the context of the education sector, this suggests that, on the one hand, educators should enjoy "non-economic intangible rights" over their teaching materials (i.e. "work created in the course of execution of his/her duties") while, on the other hand, the institution ("the employer") should enjoy sole rights over the "exploitation of the work". It is not clear how this would pertain to OER because the creation and sharing of one's teaching materials as OER entails a certain type of "exploitation" of one's own work. Yet it is likely that the "exploitation" referred to here concerns only those works where this is done for commercial purposes. This interpretation would seem to be supported based on the "non-economic" rights accorded to the creator, who, by sharing the work freely and openly as OER, is not transgressing the spirit or letter of such rights.

The government's open-mindedness regarding OER is more explicitly expressed in the Policy on ICT in Education Sector 2012–2016,[15] which, *inter alia*, plans for the following activities: "adopt creative commons license and enable open source courseware; policy support for higher education institutions that are developing open courses, enabling access to open course wares, developing distance learning infrastructure for common use" (Tuul, Banzragch & Saizmaa, 2016, p.189). These sentiments are not yet law, but they provide a positive signal for those interested in engaging with OER activities.

In addition, institutional IP policies can have more specific guidelines regarding the use or creation of OER, as they do elsewhere.[16] However, Mongolian HEIs have yet to address open licensing in their IP policies.

We did not find that OER was recognised or rewarded in the Mongolian institutional policies we reviewed. OER activity garners no special recognition for educators at this time. From a CHAT perspective, this is a significant contradiction because, of the 10 survey respondents who revealed that they had created OER in the past (Appendix 1, Q.30), this was the most important barrier to their continued creation and sharing of OER (Appendix 1, Q.34). Some 40% of these 10 respondents said the fact that there was "no reward system for staff members devoting time and energy" was "very important"; 10% said it was "important"; and none said that it was "unimportant" (Appendix 1, Q.34). This suggests that educators are very responsive to the rewards and incentives established by their employers, and that the lack of official incentive for OER activity inhibits its full potential in this system.

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15   http://bit.ly/2pc0cBH
16   http://roer4d.org/2298

However, if an educator or HEI receives funds for an OER-related project (such as was the case with DREAM IT), there are typically requirements that certain materials be released as OER, if possible. This necessity would only comprise a small number of materials at this point, but it represents one of the few cases where some sort of official pressure is put on an educator to use or create OER.

One IP lawyer and part-time lecturer stated that universities need to take responsibility for the adoption of OER by providing greater funding for it, especially by piloting projects to see what works best:

> Students are very much interested in having learning materials of their own professors on the internet under open access. However, very few professors upload their materials. Universities have enough capacity to develop OER, but financial resources are not directed for it. Universities need to decide priority subject areas and start from pilot projects. After that, they need to research how students used these pilot OER materials.

With Mongolia's history of centralised educational governance, and educators' responsiveness to official reward policies, the rules node of the CHAT triangle is particularly important for potential OER activity. Currently, there appears to be a relatively agnostic approach to OER at the governmental level, as OER-related interventions have not happened at an institutional policy level. Some positive OER intentions are noted in one national policy document, but it will likely require greater elaboration, especially at the institutional level, to optimise OER engagement in the higher education activity system.

Quality

Another key concern in the global literature on OER concerns quality (Clements & Pawlowski, 2012; Jung et al., 2011). This was raised explicitly in the interview and survey questions, yet the primary quality concern that Mongolian educators appear to have relates to the entire higher education sector. As discussed above, with the rapid massification and privatisation of higher education following the transition, the quality standards of the sector have, in many educators' estimation, fallen sharply.

Thus they do not have the same type of concern over OER quality as expressed by educators elsewhere (Willems & Bossu, 2012). Mongolian educators who are aware of OER in many ways simply view them as more educational resources that they would consider incorporating into their teaching. They already feel largely free to download and use other educational resources, regardless of copyright (Appendix 1, Q.14), for use in the classroom, based on fair use principles and common collegial practice. The introduction of OER does not appear to radically alter the resource landscape for educators who are looking for materials which are relevant to their needs and, of course, of the requisite quality.

One educator stated: "We need to start from materials from international universities with high reputation." This was supported by 75% of the survey respondents, who said that it was either "important" or "very important" that "the materials come from a university that I respect (e.g. MIT)" (Appendix 1, Q.25). Such a provenance would act as a quality signifier to them, simplifying their search processes and reassuring them that materials are credible.

Additionally, 75% also said that it was either "important" or "very important" that, when considering using an OER, "the author has a strong reputation for their teaching (if I don't know him/her personally)" (Appendix 1, Q.25). This principle was reiterated by the 75% of respondents who said that, when looking for OER to use, they were hoping to gain "access to the best possible resources" (Appendix 1, Q.26). These sentiments suggest that quality is an important criterion for the decisions Mongolian educators make (or would make) about using OER, even if it is not their overwhelming concern when considering OER.

In the context of this study, educators' major concern about educational materials centres on the notion of local relevance. This is regardless of whether the material is open or not. With a small population living in a unique context, which was cut off from the non-Soviet world until 1990, Mongolia and its contextual concerns are not incorporated into many educational resources that are available on the internet. That reality is something Mongolian educators understand very well. Thus, they try to localise educational materials, making them relevant for their students. Of the options that survey respondents were given as to how they "revise" the OER that they use – that is, translate, summarise, rewrite, resequence or localise the materials – they were more likely to "localise" materials in their revision process for the different types of OER (videos, podcasts, images, tutorials, quizzes, etc.) used than any other activity (Appendix 1, Q.23).

While localisation is a common desire, it is not easy to undertake. As one educator stated, "the localisation process may require a lot of resources. The educators with high proficiency of English in their subject area may not be interested in localisation activities, since many of them are busy with research activities".

This calls attention to the broader sense in which the "relevance" of a resource is understood. For many educators, this means that it is available in the Mongolian language. As one lecturer at NUM stated: "Localisation of English language OER into Mongolian is important." Mongolians' familiarity with English gives them a certain level of access to English-language materials, both fully copyrighted and open, but they really only become fully accessible and relevant when they are in the language of greatest comprehension, Mongolian.

However, this perspective perhaps has more urgency in the basic education sector where English is not used as widely as in higher education. An exemplar of the externally trusted resource strategy is currently being implemented in Mongolian K-12 education, where up to 1 000 videos were identified for translation from the California-based Khan Academy platform through the Open Network for Education for Mongolia (ONE Mongolia) project. More than 500 videos have already been translated, using Mongolian audio to substitute the English voice-over (ONE Mongolia, 2016).

A similar approach was undertaken in 2012 and 2013 within a research project by Norjkhorloo and Porter (2013), where short-form videos in the Mongolian language were created on single concept lessons for use by Mongolian preschool and kindergarten teachers. The videos were released online with a CC licence accompanied by a printable textbook on a public website for use by parents, teachers or any member of the public in Mongolia (Davalgaa, 2013).

Practices

HEIs are workplace settings which typically have traditions and cultural norms that are difficult to change. The tradition of generating IP has historically been a primary driver for academics. This tradition could be perceived to be at odds with OER development, use, reuse, revision, remixing and redistribution. Using someone else's lecture notes or open textbook could be thought of as counter to the traditions of the academy. In many cases, academics author textbooks and other instructional resources as part of a relationship with publishers or vendors of educational resources. The incentive for them is compensation or a royalty stream, an approach that might need to find a substitute mechanism to foster a culture of open practices, sharing and support for OER in Mongolia.

When asked whether they ever used OER in their teaching, the majority of survey respondents (52%) said that they "never" did, 9.5% said that they "rarely" did, 29% said that they "sometimes" did, 0% said that they "often" did, and 9.5% said that they "frequently" did (Appendix 1, Q.19). Thus, there is a fairly even split between users and non-users, though the relatively low frequencies expressed suggest that it is not yet a norm. As one lecturer at NUM said: "Educators are too busy and sometimes capacity to use OER is lacking. But in general, there has been significant progress in using OER by educators and students in the last three years."

Table 1: Ways in which OER are reused by survey respondents

OER formats (Tick all that apply)	"As is" (often or always) (%)	Translate (%)	Summa- rise (%)	Rewrite (%)	Resequence (%)	Localise (%)
Textbooks	**58**	25	25	17	8	8
Images	**42**	0	17	17	8	**42**
Research articles	**42**	8	25	8	8	25
Infographics	**33**	16	8	17	0	**33**
Lesson plans	**33**	0	8	8	17	**33**
e-Books	**33**	17	8	0	17	25
Elements of a course (module/unit)	**25**	**25**	**25**	17	0	17
Videos	**25**	8	**25**	8	8	**25**
Lecture notes	**25**	0	17	**25**	0	**25**
Slide presentations (PowerPoint)	**25**	8	17	17	8	17
Datasets	**25**	17	8	8	8	17
Whole courses	17	0	**50**	17	8	8
Audio podcasts	17	8	8	17	0	**25**
Tutorials	17	0	8	17	8	**33**
Tests and quizzes	17	0	8	8	17	**33**
Top activity per format category	*11/15*	*1/15*	*3/15*	*1/15*	*0/15*	*8/15*

Note: bold numbers = highest percentage of respondents in a particular row category

Of those who said that they do use OER, the majority (50%) stated that they find resources through Google Scholar searches, followed by institutional repositories (33%) and personal websites or blogs (25%) (Appendix 1, Q.21). They also engaged with the resources in different ways depending on what format it was in. Table 1 shows the percentage of respondents who revealed the ways in which they used certain types of OER (drawn from Appendix 1, Q.22/23).

Thus, respondents showed a high proclivity for using OER "as is" (without any modification). In 11 of the 15 format categories, this comprised the top use style for respondents, especially for textbooks, images and research articles. Respondents also engaged in translation, but at a much lower level. In just one of the categories – elements of a course – does translation achieve a top use score (along with "as is" and "summarise"). This suggests that, even though many educators desire that materials be in Mongolian, the effort required to translate the materials may outweigh the benefits of having resources available in Mongolian, particularly if the students have the requisite facility with English to comprehend it.

Respondents revealed that they like to summarise OER that are whole courses, as well as elements of a course or video. These are materials that are intellectually "substantial" in that they require a significant amount of time on the part of educators who wish to engage with their contents. The educators prefer to present summarised elements of these materials rather than the unedited materials themselves, as this would likely entail temporal investments on the part of students that would be pedagogically unnecessary. However, the respondents did not appear to do much rewriting or resequencing (i.e. "remixing") with OER. Only with lecture notes did 25% of them say that they rewrote these resources.

Lastly, a high percentage of respondents engage in localisation activities with multiple formats. In eight of the 15 formats, localisation ranks as a top activity for these educators. This coincides with the localisation desires discussed above, in which interview and survey respondents said that localised materials have great value for their teaching.

In this nascent OER environment, the percentages revealed in Table 1 make sense, in that respondents are more likely to use resources "as is", followed by "localisation" and then "summarising". These are the least complex ways of reusing OER, as translation, rewriting and resequencing require extensive investments in time and, in some cases, technical and pedagogical proficiency (Okada, Mikroyannidis, Meister & Little, 2012). However, over time, as Mongolian educators become more aware of what OER are available to them, the number of educators who engage in these more complex activities may also increase.

Another activity that may increase amongst Mongolian educators is OER creation and sharing. Currently, the notion of sharing and proactive contribution to the global OER "commons" is a relatively new concept for them. As one NUM lecturer suggested: "Some educators are very cautious about sharing their educational materials. It may be they don't have sufficient understanding of a sharing culture." The survey data succinctly frame the current situation, with 76% of respondents reporting that they have *not* created or shared OER, and only 24% reporting that they have (Appendix 1, Q.30).

The 10 survey respondents who said that they have created and shared OER, did so via a number of different online platforms. Table 2 shows a list of possible distribution platforms along with the percentage of respondents who shared their teaching materials per platform (Appendix 1, Q.32).

Table 2: Platforms where respondents have shared OER

Platform	% of respondents
Personal website or blog	60
Institutional learning management system	50
Cloud-based storage (e.g. Google Drive)	50
Departmental website	30
International repository (e.g. MERLOT)	20
Image/video-based services (e.g. Flickr, PowerPoint, YouTube)	20
Institutional repository	0
Wiki site (e.g. Wikipedia, Wikieducator.org)	0

It appears that OER creators have preferred to use personal websites or blogs (60%), along with institutional learning management systems and cloud-based storage platforms (50% each). While some (30%) shared their work on departmental websites, a more modest percentage of respondents used "official" global sharing platforms such as international repositories (20%) and image/video-based services (20%), and none used a wiki site or an institutional repository (this may, however, be because these do not exist as an option).

From a CHAT perspective, these practices reveal the current state of the activity system in that the OER use and creation percentages are relatively modest with plenty of room for growth, and the particular ways in which educators use and create OER suggest an exploratory (rather than a long-term) approach to this activity. On the CHAT triangle, these practices and changes are represented on the "outcome" node. While the hoped-for outcome is sustained OER practice, which would be achieved through an optimised activity system, the current practices described above reveal that there is still some way to go until that is a reality.

Value and utility

Perhaps the most important factor in determining whether OER have a future in Mongolia is whether educators feel that they have value and utility for their teaching needs. OER will have to be as useful as conventional materials (or even more so) if they are to complement, let alone displace, the materials that educators already use. To ascertain whether OER were meeting respondents' pedagogical needs and desires, educators were asked what goals or benefits they were seeking through using OER (Appendix 1, Q.26).

Of the many possible answers they were prompted with, the three primary responses were "gaining access to the best possible resources" (75% of respondents said this was either "important" or "very important"), "promoting research and education as publicly open activities" (75%) and "outreach to disadvantaged communities" (67%). The first response refers to a desire for high-quality materials, discussed above; the second refers to a moral commitment to open educational activities; and the third refers to a desire to help overcome contemporary inequalities in Mongolia.

However, when asked how they would rate the success of their use of OER, the results were mixed, as Table 3 shows (Appendix 1, Q.27).

Table 3: Respondents' view of the success of their experience with OER

Response	% of respondents
Neutral	42
Successful	25
Not very successful	17
Not at all successful	8
Very successful	8

Only 33% of respondents who used OER thought that they had a successful or very successful experience in doing so. A sizeable minority of 25% thought it was not successful and 42% were neutral about their experience.

For OER to compete against other materials – because they, like all educational materials, are in a form of competition with each other for educators to select them – they should ideally be providing more positive results if they are to go from being a funder-driven innovation to a mainstream consideration.

For the 25% who stated that their use of OER was not successful (Appendix 1, Q.28), they revealed that "it did not enhance the quality of my teaching" (33%) and "it did not make the learning process more flexible" (33%). These responses should be treated with some caution because the absolute numbers of respondents here are low, but this does raise concern for ambitions around OER, particularly if these are common responses for other Mongolian educators beyond the scope of this project.

However, for the 33% of users who said that their experience was successful (Appendix 1, Q.29), they claimed that "it has enhanced the quality of my teaching" (50%), "it has saved me money" (25%) and "it has made the learning process more flexible" (25%). Thus, for these educators, OER satisfied quality, cost and flexibility concerns – three elements that are key for OER to remain a sustainable interest for Mongolians.

Lastly, though only 10 of the 42 survey respondents had created and shared OER, their reasons for doing so reveal some of the surprising benefits of engaging in this activity as an educator. Table 4 shows the factors motivating respondents to create OER (Appendix 1, Q.33).

Table 4: Factors motivating respondents to create OER (n = 10)

Motivating statement	% of responses
It improves the quality of my materials, knowing that other educators may use them	70
It helps other educators	60
It enhances my reputation amongst my peers	60
I have benefited from using others' educational resources, so I want to contribute also	50
I believe that teaching resources should be open	40
Other	20
It is normal practice in my discipline	0

Table 4 shows that the primary motivating factor was that it improved educators' own teaching materials because they knew that other educators might use them (70%). This encouraged the creators to improve the quality of their materials before releasing them to the public. This is a beneficial outcome for both the creator and potential users.

The next two most common responses were that "it helps other educators" (60%), an altruistic notion that taps into these educators' desire to share and connect, and "it enhances my reputation amongst my peers", a notion that taps into these same educators' self-interested desires to enhance their reputations. This is as it should be: the engagement with OER, if it is to be a successful, broad-based enterprise, needs to satisfy educator desires that are both self- and externally directed.

From a CHAT perspective, the value and utility of OER for Mongolian educators is very much an open question. This may be due to the relatively small percentages of educators who have used OER in their teaching, or who have created and shared OER with others. Perspectives regarding OER may crystalise over time, one way or another, determining whether it becomes a common, accepted and sustained innovation in the higher education space.

Conclusion and recommendations

While the OER concept is relatively new as an educational innovation, its arrival and deployment in Mongolia has a very particular history, one tied up with the radical changes that occurred after the country's transition from communism to a market economy, from Soviet patronage to international donor sponsorship, from Russian as a second language to English, from free to fee-based educational provision, and from state-controlled higher education to an increasingly massified, privatised sector.

Within this context, OER awareness-raising activities began in 2010 with a series of national forums, seminars and workshops on OER. Continued advocacy work took place, with one OER preschool research project conducted by Norjkhorloo and Porter (2013), the creation of a Mongolian Creative Commons Affiliate (2014), and the ONE Mongolia (2014) project, which introduced open practices, OER resources and training to the K-12 sector. However, to date no OER initiatives have been launched in the higher education system to provide broad-scale policy or practice strategies to guide further implementation across Mongolia's university sector.

As the Findings section reveals, the current situation in Mongolia is that open development strategies and practices are in a formative state of deployment, with low adoption rates in the education sector relative to traditional teaching approaches. A number of reasons – as illuminated in the analysis of the Mongolian education activity system – help explain this.

First, despite recent efforts to promote OER (including the establishment of a National OER Program), this study's interviews and surveys suggest that OER awareness remains modest amongst higher education educators and administrators. This relative lack of *awareness* inhibits the potential of OER in the country. Indeed, there is likely only so much that donors can do in this regard. At some point, it would seem crucial that OER become part of everyday educational practice for a larger group of instructors so that it can grow and spread across the sector in an organic manner. Because Mongolia has been highly

dependent on donor organisations in education since the transition, there is every possibility that this funder-driven innovation will be ignored once the funders move on or focus on other innovations. The government, which initiated the funding for rolling out the National OER Program and ONE Mongolia project, may also alter its funding commitments as new political administrations take power, as happened in 2016. For the ideal outcome of the development of sustainable open practices and policies to be achieved (the "outcome" from the CHAT activity system), Mongolian educators will have to engage with OER in larger numbers and create communities of practice that incorporate OER into the prevailing academic culture. This takes time, and will likely take more funding from donors to ensure that such a culture can grow.

Second, a much smaller issue – but one that cannot be completely taken for granted in Mongolia's developing context – relates to infrastructural *access*. This study's data suggest that most higher education practitioners have the requisite access to computer hardware, internet connectivity and electricity to engage with OER at some level. A small percentage of respondents did, however, say that they struggled with access issues, which reminds us of how diverse the educational contexts are in this vast yet sparsely populated country. In the capital, however, where most higher education takes place, access is good.

Third, as suggested above, a *culture* around OER engagement has not yet emerged. It is a new concept, one that may have certain benefits in situations where costs are a concern for both educators and students, but the lack of awareness broadly means that it is typically only isolated individual educators who are adopting OER. Changing culture also takes time, as disciplinary norms are established globally, not just locally, and peer expectations are tied up with institutional policy, funding opportunities and pedagogical practice (as well as the kinds of results one obtains through experimenting with OER). This may be one area where donors can focus their interventions more on teams and departments and less on individuals, and more on high-level management than the mass of individual lecturers. Indeed, the peer-support programmes, as modelled at Canada's BCcampus,[17] could be useful for building a core team of OER advocates and trainers who are also higher education instructors (Porter, 2013). Even more ambitiously, the government, with donor funding and advice, could establish a sector-wide educational repository similar to the MERLOT II[18] multimedia educational resource repository developed by California State University. It is a curated repository of peer-reviewed OER learning materials that has gained the trust of higher education educators because of its reputation and peer-review processes. A similar initiative could be effective in the Mongolian context.

Fourth, the educational *policy* environment is mostly agnostic regarding OER, meaning that it leaves the choices surrounding OER adoption with individual educators. This would be fine if more educators knew about OER and had some experience with it, as they could then exercise their pedagogical freedom in assessing all types of course materials, including OER. However, in Mongolia's context of low OER awareness, government policy-makers and institutional managers can play a much greater role in enabling OER adoption by creating pro-OER policies. This is hinted at in some recent government publications, such as the Policy on ICT in Education Sector 2012–2016, but as this study's respondents suggested,

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17   https://bccampus.ca/2014/10/09/improving-adoption-of-open-textbooks-through-faculty-advocates/
18   https://www.merlot.org/merlot/index.htm

they would be far more responsive to national- and/or institutional-level incentive policies that reward and recognise engagement with OER. For instance, the government could initiate a funding programme for OER development and sustainability that incentivises OER adoption at Mongolian universities, or a number of pilot universities could do the same within certain departments. Thus, while the national Copyright Law and various other policies appear to open the door for OER adoption for educators, a less agnostic and more explicitly supportive set of policies would be needed for robust OER engagement across the country.

Fifth, Mongolian educators are less worried about the *quality* of OER (compared to Western academics), but more concerned about a particular sub-component of quality, *relevance*. The unique cultural–historical context that Mongolians enjoy, along with the fact that most OER are developed elsewhere, makes educators desire teaching materials that are locally relevant – that is, "localised". Many already engage in localising processes with the teaching materials they have, but it takes time. If OER were more localised to the Mongolian context – which would likely mean that more Mongolians were creating and sharing OER – educators would find them very useful. Educators would also appreciate it if more OER were available in the Mongolian language, though the predominance of materials in English is not an absolute barrier to use. To deal with this, it may be useful if the government, in conjunction with international funders, embarked on a similar OER process as was done in South Africa with the independent OER producer Siyavula[19] (Goodier, 2017), which produced open textbooks for the K-12 education sector. This could be done in Mongolia – not only at the lower grade levels (where the mass benefits are obvious), but possibly with select course textbooks at the higher education level, especially in those subjects with the greatest numbers of students and/or that need to be more attuned to the local cultural and linguistic context. These could be continuously updated and revised by Mongolian academics who have an interest in keeping such materials locally relevant.

Sixth, a number of the educators and administrators interviewed and surveyed have engaged with OER-related *practices*, revealing that OER use was more common for them than OER creation. This is a common distinction (de Oliviera Neto et al., 2017), even though it is likely that if more Mongolian educators created OER, more Mongolian educators would then have locally relevant OER to use. It is therefore important to not only increase educators' range and intensity of OER use practices[20] (Okada et al., 2012), but to promote creation as well. This may likely be the key to whether OER adoption in Mongolia will become a robust, mature and sustainable activity going forward. Given that academic colleagues have often provided the greatest degree of knowledge to educators in Mongolia concerning OER, it may be useful for the OER community to initiate a "faculty fellows" programme (again modelled on the Canadian BCcampus[21]), in which peers teach peers how to think about and use OER.

Lastly, Mongolian educators have some reservations about the *value and utility* of OER. As revealed in the Findings section, while a third of respondents (33%) who had used OER were positive about their experience with them, a number (42%) were simply neutral about them and a significant minority (25%) reported negative experiences. These proportions would need to change markedly if educators are going to spread knowledge of OER to their peers, use OER again and create and share OER themselves. Given the relatively small

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19   http://www.education.gov.za/Curriculum/LearningandTeachingSupportMaterials(LTSM)/SiyavulaTextbooks.aspx
20   http://opencontent.org/blog/archives/3251
21   https://bccampus.ca/2014/10/09/improving-adoption-of-open-textbooks-through-faculty-advocates/

sample size for this study, it may be that this does not represent the broader Mongolian educators' experience with OER, but it should raise concerns nonetheless, as this lukewarm judgement of OER – as a type of teaching material that isn't really any better than conventional teaching materials – could limit its growth and potential to a small minority of committed open advocates. The fact that Mongolian educators also feel largely free to download and use any type of educational material online (whether open or copyrighted) means that the typical value proposition made by OER advocates – that OER is "free" – may not mean much when educators are already obtaining and using desired materials for "free". This reminds us that OER compete against conventional materials in a very crowded market. It is likely that only with the creation and availability of more locally relevant materials will OER come to be associated with the value and utility that is required for sustained interest.

This research was undertaken in an effort to understand the cultural–historical factors that influence the adoption, implementation and dissemination of OER in Mongolia's higher education sector. Mongolia has shown that it can develop and support large-scale educational-resource projects (such as the ONE Mongolia project). It may need to take a similar proactive and intentional stance in the higher education sector if it seeks to improve the quality of content, and develop and sustain a population of educators and learners who are familiar and comfortable with using OER. Additionally, while certain contradictions were revealed in this activity system, most are not of the type that cannot be adjusted with greater OER awareness, official rewards and incentives for OER engagement, or continued donor funding (so that the government continues to support this innovation). The promotion of targeted training programmes along with models for compensation might provide a potential "tipping point" (Gladwell, 2002) to advance open practice and OER in Mongolia.

Acknowledgements

References

ADB (Asian Development Bank). (2011a). *Higher education reform project (rrp prc 43007): Sector assessment (summary): Education*. Manila: Asian Development Bank. Retrieved from https://www.adb.org/sites/default/files/linked-documents/43007-023-mon-ssa.pdf

ADB (Asian Development Bank). (2011b). *Report and recommendation of the President to the Board of Directors*. Manila: Asian Development Bank. Retrieved from https://www.adb.org/sites/default/files/project-document/61182/43007-023-mon-rrp.pdf

Adiya, E. (2010). *Gender equity in access to higher education in Mongolia*. Ph.D thesis. Pittsburgh: University of Pittsburgh. Retrieved from http://d-scholarship.pitt.edu/8631/1/enkhjargaladiya.pdf

Allen, I. E. & Seaman, J. (2014). *Opening the curriculum: Open Education Resources in U.S. higher education, 2014.* Babson Park, MA: Babson Survey Research Group and The William and Flora Hewlett Foundation. Retrieved from http://www.onlinelearningsurvey.com/reports/openingthecurriculum2014.pdf

Altbach, P. G. (2004). The past and future of Asian universities. In P. G. Altbach & T. Umakoshi (Eds.), *Asian universities: Historical perspectives and contemporary challenges* (pp. 13–32). Baltimore: Johns Hopkins University Press.

Atkins, D. E., Brown, J. S. & Hammond, A. L. (2007). *A review of the Open Educational Resources (OER) movement: Achievements, challenges and new opportunities.* Menlo Park, CA: William and Flora Hewlett Foundation. Retrieved from http://www.hewlett.org/wp-content/uploads/2016/08/ReviewoftheOERMovement.pdf

Baasansuren, B. & Porter, D. (2013). Mongolia's educational resources go into the great wide open. In H. Grunfeld & M. N. L. Hoon (Eds.), *Dream I.T.: Development research to empower all Mongolians through information technology* (pp. 47–52). Ulaanbaatar: Datacom. Retrieved from http://www.academia.edu/8335079/Mongolia_s_educational_resources_go_into_the_great_wide_open

Bateman, P. (2006). *The AVU Open Educational Resources (OER) architecture for higher education in Africa: Discussion paper.* Paris: OECD. Retrieved from http://www.oecd.org/edu/ceri/38149047.pdf

Begzsuren, T. & Dolgion, A. (2014). *Gender overview – Mongolia: A desk study.* Bern: Swiss Agency for Development and Cooperation & Independent Research Institute of Mongolia. Retrieved from https://www.eda.admin.ch/content/dam/countries/countries-content/mongolia/en/SDC-Gender-%20Overview-Mongolia-%202014-EN.pdf

Boston Consulting Group. (2013). *The Open Education Resources ecosystem: An evaluation of the OER movement's current state and its progress toward mainstream adoption.* Boston, MA: Boston Consulting Group. Retrieved from http://www.hewlett.org/sites/default/files/The%20Open%20Educational%20Resources%20Ecosystem_1.pdf

Boyatzis, R. E. (1998). *Transforming qualitative information: Thematic analysis and code development.* Thousand Oaks, CA: Sage.

Bray, M., Davaa, S., Spaulding, S. & Weidman, J. C. (1994). Transition from Socialism and the financing of higher education: The case of Mongolia. *Higher Education Policy, 7(4)*, 36–42. Retrieved from https://www.researchgate.net/publication/44818827_Transition_from_Socialism_and_the_Financing_of_Higher_Education_The_Case_of_Mongolia

Butcher, N. (2011). *A basic guide to Open Educational Resources (OER).* Vancouver: Commonwealth of Learning. Retrieved from http://unesdoc.unesco.org/images/0021/002158/215804e.pdf

CERI/OECD (Centre for Educational Research and Innovation/Organisation for Economic Cooperation and Development). (2007). *Giving knowledge for free: The emergence of Open Educational Resources.* Paris: Centre for Educational Research and Innovation & Organisation for Economic Cooperation and Development. Retrieved from http://www.oecd.org/edu/ceri/38654317.pdf

Chua, A. (2007). *Day of empire: How hyperpowers rise to global dominance – and why they fall.* New York: Doubleday.

Clements, K. I. & Pawlowski, J. M. (2012). User-oriented quality for OER: Understanding teachers' views on re-use, quality, and trust. *Journal of Computer Assisted Learning, 28(1)*, 4–14. Retrieved from http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2729.2011.00450.x/abstract

Cohen, R. (2004). The current status of English education in Mongolia. *Asian EFL Journal, 6(4)*. Retrieved from http://asian-efl-journal.com/Dec_04_rc.pdf

Commonwealth of Learning (2016). *Open Educational Resources in the Commonwealth 2016*. Vancouver: Commonwealth of Learning. Retrieved from http://oasis.col.org/bitstream/handle/11599/2441/2016_Phalachandra-Abeywardena_OER-in-Commonwealth-2016.pdf?sequence=4

Cox, G. & Trotter, H. (2017). Factors shaping lecturers' adoption of OER at three South African universities. In C. Hodgkinson-Williams & P. B. Arinto (Eds), *Adoption and impact of OER in the Global South* (pp. 287–347). Retrieved from https://doi.org/10.5281/zenodo.601935

Creswell, J. W. (2014). *Research design: qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, CA: Sage.

Daniel, J., Kanwar, A. & Uvalić-Trumbić, S. (2006). A tectonic shift in global higher education. *Change: The Magazine of Higher Learning*, *38(4)*, 16–23. Retrieved from http://www.learntechlib.org/p/98724

Davalgaa. (2013). *Davalgaa: Expression through education*. Ulaanbaatar: Davalgaa. Retrieved from http://davalgaa.mn/

Davis, H. C., Carr, L., Hey, J. M. N., Howard, Y., Millard, D., Morris, D. & White, S. (2010). Bootstrapping a culture of sharing to facilitate Open Educational Resources. *IEEE Transactions on Learning Technologies, 3(2)*, 96–109. Retrieved from http://ieeexplore.ieee.org/document/5210093/?reload=true

del Rosario, M. (2005). *The Mongolian drop out study*. Ulaanbaatar: Mongolian Education Alliance. Retrieved from http://www.edupolicy.net/no-access/download-id/866/

de Oliveira Neto, J. D., Pete, J., Daryono & Cartmill, T. (2017). OER use in the Global South: A baseline survey of higher education instructors. In C. Hodgkinson-Williams & P. B. Arinto (Eds), *Adoption and impact of OER in the Global South* (pp. 69–118). Retrieved from https://doi.org/10.5281/zenodo.599535

Dhanarajan, G. & Abeydawara, I. S. (2013). Higher education and Open Educational Resources in Asia: An overview. In G. Dhanarajan & D. Porter (Eds.), *Open Educational Resources: An Asian perspective* (pp. 3–18). Vancouver: Commonwealth of Learning. Retrieved from https://oerknowledgecloud.org/sites/oerknowledgecloud.org/files/pub_PS_OER_Asia_web.pdf

Dhanarajan, G. & Porter, D. (Eds.). (2013). *Open Educational Resources: An Asian perspective*. Vancouver: Commonwealth of Learning. Retrieved from https://oerknowledgecloud.org/sites/oerknowledgecloud.org/files/pub_PS_OER_Asia_web.pdf

Dovchin, S. (2011). Performing identity through language: The local practices of urban youth populations in post-socialist Mongolia. *Inner Asia, 13,* 315–333. Retrieved from http://www.jstor.org/stable/24572097?seq=1#page_scan_tab_contents

Dovchin, S. (2015). Language, multiple authenticities and social media: The online language practices of university students in Mongolia. *Journal of Sociolinguistics, 19(4),* 437–459. Retrieved from http://onlinelibrary.wiley.com/wol1/doi/10.1111/josl.12134/full

Dovchin, S., Sultana, S. & Pennycook, A. (2015). Relocalizing the translingual practices of young adults in Mongolia and Bangladesh. *Translation and Translanguaging in Multilingual Contexts, 1(1),* 4–26. Retrieved from https://benjamins.com/#catalog/journals/ttmc.1.1.01dov/fulltext

Dovchin, S., Sultana, S. & Pennycook, A. (2016). Unequal translingual Englishes in the Asian peripheries. *Asian Englishes, 18(2)*, 92–108. Retrieved from http://dx.doi.org/10.1080/13488678.2016.1171673

Engeström, Y. (2001). Expansive learning at work: Toward an activity theoretical reconceptualization. *Journal of Education and Work, 14(1),* 133–156. Retrieved from ftp://ftp.uwc.ac.za/users/DMS/CITI/New%20PHd%20folder/PHd%20PDF's/expansive-Engestrom_2001-1.pdf

Engeström, Y. & Sannino, A. (2010). Studies of expansive learning: Foundations, findings and future challenges. *Educational Research Review, 5,* 1–24. Retrieved from http://www.sciencedirect.com/science/article/pii/S1747938X10000035?via%3Dihub

Fitzgerald, A. & Hashim, H. N. M. (2012). Enabling access to and re-use of publicly funded research data as open educational resources: A strategy for overcoming the legal barriers to data access and re-use. In *Proceedings of the Regional Symposium on Open Educational Resources: An Asian Perspective on Policy and Practices*, 19–21 September 2012. Penang: Wawasan Open University.

Flor, A. G. (2013). Exploring the downside of open knowledge resources: The case of indigenous knowledge systems and practices in the Philippines. *Open Praxis*, *5(1)*, 75–80. Retrieved from http://openpraxis.org/index.php/OpenPraxis/article/view/15

Gladwell, M. (2002). *The tipping point: How little things can make a big difference.* New York: Little, Brown and Company.

Goodier, S. (2017). Tracking the money for Open Educational Resources in South African basic education: What we don't know. *International Review of Research in Open and Distributed Learning, 18(4)*. Retrieved from http://dx.doi.org/10.19173/irrodl.v18i4.2990

Government of Mongolia. (2006). *Law of Mongolia on Copyright and related rights (as last amended on 19 January 2006)*. Ulaanbaatar: Government of Mongolia. Retrieved from http://www.wipo.int/wipolex/en/text.jsp?file_id=203958

Grunfeld, H. & Hoon, M. N. L. (Eds.). (2013). *Dream I.T.: Development research to empower all Mongolians through information technology*. Ulaanbaatar: International Development Research Centre & Datacom. Retrieved from https://www.researchgate.net/publication/256297613_Grunfeld_H_Ng_M_Eds_2013_DREAM_IT_development_research_to_empower_all_Mongolians_through_information_communications_technology_Ulaanbaatar_Datacom

Hatakka, M. (2009). Build it and they will come?: Inhibiting factors for reuse of open content in developing countries. *The Electronic Journal on Information Systems in Developing Countries*, *37(5)*, 1–16. Retrieved from http://www.is.cityu.edu.hk/staff/isrobert/ejisdc/37-5.pdf

Heyneman, S. P. (2004). One step back, two steps forward: The first stage of the transition for education in Central Asia. In S. P. Heyneman & A. J. DeYong (Eds.), *The challenge of education in Central Asia*. Greenwich: Information Age Publishing.

Jansen, H. (2010). The logic of qualitative survey research and its position in the field of social research methods. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, *11(2)*. Retrieved from http://nbn-resolving.de/urn:nbn:de:0114-fqs1002110

Jung, I., Wong, T. M., Li, C., Baigaltugs, S. & Belawati, T. (2011). Quality assurance in Asian distance education: Diverse approaches and common culture. *The International Review of Research in Open and Distributed Learning, 12(6)*, 63–83. Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/991/1953

Karunanayaka, S. P., Naidu, S., Dhanapala, T. D. T. L., Gonsalkorala, L. R. & Ariyaratne, A. (2014). From mind maps to mind sets: Shifting conceptions about OER in the Faculty of Education at the Open University of Sri Lanka. *Paper presented at the 2nd Regional Symposium on Open Educational Resources: Beyond Advocacy, Research and Policy*, 24–27 June 2014. Wawasan Open University, Penang, Malaysia. Retrieved from http://weko.wou.edu.my/?action=repository_action_common_download&item_id=369&item_no=1&attribute_id=15&file_no=1

Marzluf, P. (2012). Words, borders, herds: Post-socialist English and nationalist language identities in Mongolia. *International Journal of the Sociology of Language*, *2012(218)*, 195–216. Retrieved from http://dx.doi.org/10.1515/ijsl-2012-0064

Masterman, L. & Wild, L. (2011). *JISC OER impact study: Research report*. Oxford: Jisc. Retrieved from https://weblearn.ox.ac.uk/access/content/group/ca5599e6-fd26-4203-

b416-f1b96068d1cf/Research%20Project%20Reports/OER%20Projects%202011-2014/
JISC%20OER%20Impact%20Study%20Research%20Report%20v1-0.pdf

McGill, L., Falconer, I., Dempster, J. A., Littlejohn, A. & Beetham, H. (2013). *Journeys to Open Educational Practice: UKOER/SCORE review final report*. London: Jisc. Retrieved from https://oersynth.pbworks.com/w/file/fetch/67270759/OER%20Review%20OER%20Journeys.pdf

MECSM (Ministry of Education, Culture and Science of Mongolia). (2015). Higher education statistics. Ulaanbaatar: Government of Mongolia. Retrieved from http://www.mecss.gov.mn/Дээд%20статистик

Norjkhorloo, N. & Porter, D. (2013). Exploring the use of open educational resources with teachers and parents of early-age children in Mongolia. In H. Grunfeld & M. N. L. Hoon (Eds.), *Dream I.T.: Development research to empower all Mongolians through information technology* (pp. 25–46). Ulaanbaatar: International Development Research Centre & Datacom. Retrieved from http://www.academia.edu/8335079/Mongolia_s_educational_resources_go_into_the_great_wide_open

OERAsia. (2010). *A study of the current state of play in the use of Open Educational Resources (OER) in the Asian Region (survey instrument)*. Penang: Wawasan Open University. Retrieved from https://oerasia.org/images/files/OERAsia%20Survey%20Instrument.pdf

OER Hub (2014). *OER Hub survey questions*. Milton Keynes: The Open University. Retrieved from https://docs.google.com/spreadsheets/d/1fL_yf-O70ZjvH67Ue8LlfidjEXwtDQ5T0TBe-Z1GYaI/edit#gid=0

Okada, A., Mikroyannidis, A., Meister, I. & Little, S. (2012). "Colearning" – collaborative networks for creating, sharing and reusing OER through social media. In *Cambridge 2012: Innovation and impact – Openly collaborating to enhance education*, 16–18 April 2012. Cambridge, UK. Retrieved from http://oro.open.ac.uk/33750/2/59B2E252.pdf

ONE Mongolia (2014). *Open Network for Education in Mongolia*. Ulaanbaatar: ONE Mongolia. Retrieved from http://one.mn/en/

Orr, D., Rimini, M. & Van Damme, D. (2015). *Open Educational Resources: A catalyst for innovation, educational research and innovation*. Paris: OECD Publishing. Retrieved from http://dx.doi.org/10.1787/9789264247543-en

Pegler, C. (2012). Herzberg, hygiene and the motivation to reuse: Towards a three-factor theory to explain motivation to share and use OER. *Journal of Interactive Media in Education, 2012(1)*, Art.4. Retrieved from http://doi.org/10.5334/2012-04

Porter, D. A. (2013). *Exploring the practices of educators using open educational resources (OER) in the British Columbia higher education system*. Burnaby, BC: Simon Fraser University. Retrieved from http://summit.sfu.ca/item/13663

Reed, P. (2012). Awareness, attitudes and participation of teaching staff towards the open content movement in one university. *Research in Learning Technology, 20(4)*, 18250. Retrieved from http://dx.doi.org/10.3402/rlt.v20i0.18520

Rolfe, V. (2012). Open Educational Resources: Staff attitudes and awareness. *Research in Learning Technology*, *20*, 14395. Retrieved from https://www.dora.dmu.ac.uk/handle/2086/6188

Saldana, J. (2012). *The coding manual for qualitative researchers*. Thousand Oaks, CA: Sage.

Santos-Hermosa, G. (2014). ORIOLE, in the search for evidence of OER in teaching: Experiences in the use, re-use and the sharing and influence of repositories. *Qualitative Research in Education*, *3(2)*, 232–268. Retrieved from http://www.hipatiapress.com/hpjournals/index.php/qre/article/view/1003

Steiner-Khamsi, G. & Stolpe, I. (2004). Decentralization and recentralization reform in Mongolia: Tracing the swing of the pendulum. *Comparative Education*, *40(1)*, 29–53. Retrieved from http://www.tandfonline.com/doi/abs/10.1080/0305006042000184872

Sultana, S., Dovchin, S. & Pennycook, A. (2013). Styling the periphery: Linguistic and cultural takeup in Bangladesh and Mongolia. *Journal of Sociolinguistics, 17(5)*, 687–710. Retrieved from http://onlinelibrary.wiley.com/wol1/doi/10.1111/josl.12055/full

Trotter, H., Kell, C., Willmers, M., Gray, E. & King, T. (2014). *Seeking impact and visibility: Scholarly communication in Southern Africa*. Cape Town: African Minds. Retrieved from https://core.ac.uk/download/pdf/29051292.pdf

Tuul, S., Banzragch, O. & Saizmaa, T. (2016). E-learning in Mongolian higher education. *The International Review of Research in Open and Distributed Learning, 17(2)*. Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/2227/3653

Tynan, B. & James R. (2013). Distance education regulatory frameworks: Readiness for openness in Southwest Pacific/South-East Asia region nations. *Open Praxis, 5(1)*, 91–97. Retrieved from http://openpraxis.org/index.php/OpenPraxis/article/view/31/6

Weidman, J. (1995). Diversifying finance of higher education systems in the Third World: The cases of Kenya and Mongolia. *Education Policy Analysis Archives, 3(5)*. Retrieved from http://epaa.asu.edu/ojs/article/download/648/770

West, P. G. & Victor, L. (2011). *Background and action paper on OER: A background and action paper for staff of bilateral and multilateral organisations at the strategic institutional education sector level*. Babson Park, CA: William and Flora Hewlett foundation. Retrieved from http://www.paulwest.org/public/Background_and_action_paper_on_OER.pdf

Wiley, D., Green, C. & Soares, L. (2012). *Dramatically bringing down the cost of education with OER: How Open Education Resources unlock the door to free learning*. Washington, D.C.: Center for American Progress. Retrieved from http://files.eric.ed.gov/fulltext/ED535639.pdf

Willems, J. & Bossu, C. (2012). Equity considerations for open educational resources in the glocalization of education. *Distance Education, 33(2)*, 185–199. Retrieved from http://dx.doi.org/10.1080/01587919.2012.692051

World Bank (2007). *Mongolia: Building the skills for the new economy*. Report No. 40118. Washington, D.C.: World Bank. Retrieved from https://openknowledge.worldbank.org/handle/10986/7746

Yano, S. (2012). *Overeducated? The impact of higher education expansion in post-transition Mongolia*. Ph.D thesis. Washington, D.C.: University of Columbia. Retrieved from http://hdl.handle.net/10022/AC:P:13128

Yin, R. K. (2014). *Case study research*: *Design and methods*. Thousand Oaks, CA: Sage.

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