Abstract

India appears to show a huge appetite for openness. In 2008 the Indian Government’s National Knowledge Commission (NKC) called for a ‘national e-content and curriculum initiative’ to stimulate the creation, adaptation and utilization of OER by Indian institutions and the leveraging of OER produced outside India. Since then India has gained its own national OER repository – the National Repository of Open Educational Resources (NROER) (http://nroer.gov.in/home/), launched in 2013, extending the existing provision of OER offered by repositories such as the Indira Gandhi National Open University (IGNOU)-hosted e-GyanKosh (http://www.egyankosh.ac.in/). Beyond the creation and delivery of content, open educational practices have been promoted by the ever-growing Wikimedia India Chapter and by Creative Commons India, not to mention numerous OER projects seeking to exploit the potential of OER in the interests of educational inclusion and social justice. Tracking the development of OER in India, Das (2011, p. 14) concludes that ‘Indian OER initiatives serve diverse learning communities and bridge knowledge gaps between privileged and under-privileged communities’.

Since 2013 the OER Research Hub (www.oerresearchhub.org) has been conducting collaborative research with the UK Open University-led India-based TESS-India project (http://tess-india.edu.in/), which is developing OER for use in India’s teacher education system. In 2014 this research was broadened to include a pan-India survey of OER use and attitudes to OER and openness. The biggest of its kind ever to have been conducted in India, the survey employs many of the questions developed by the OER Research Hub for use in its OER impact research around the world (http://oerresearchhub.org/collaborative-research/instruments/), plus further questions designed to be appropriate to Indian educators and learners. Availability in English and Hindi language versions has increased the survey’s reach, as has its being available both online and in hard copy format, thereby avoiding the perpetuation of the digital divide that can occur when online-only surveys are conducted in the developing world. The survey respondents include educators in the K12, college and higher education sectors, in addition to teacher educators, education managers, NGOs, academics, activists and policy-makers. Topics covered by the survey include understanding of open licensing, attitudes to sharing and actual sharing practices, open resource creation and adaptation, disciplinary differences in the creation and use of OER, selection indicators used when choosing OER, perceptions of the impact of OER on India’s formal and informal learners, cost-savings enjoyed through OER use, and barriers to OER use and re-use experienced by educators and learners.

The pan-India survey report will be launched at OER15 and this paper will share the main survey findings, building an overall picture of attitudes to openness and the use of OER in diverse education sectors across India. These findings will then be compared with data collected by the OER Research Hub elsewhere in the world. The paper concludes by providing recommendations to existing and future OER projects operating in India, arguing that the distinct social, economic and cultural factors impacting on India’s education system demand a unique approach to developing, using and promoting OER for use in the Indian sub-continent.

1. Introduction

The leverage of Open Educational Resources (OER) is widespread in the global north (Open Education Europa, 2015). OER use within the global south has been similarly promoted as offering increased access to and development within education. However, understanding the true impact of OER in the global south is problematic, with debates on the topic often dominated by a rhetoric reflecting northern assumptions and priorities and an implicit view that ‘the rich north… push[ing]…resources at the south without thought of reciprocity’ (Glennie et al, 2012, p. v), on a ‘one size fits all’ basis, is entirely
acceptable. Add to this a ‘deficit view’ of the potential for OER in development contexts (Glennie et al, 2012, p. 4) and such rhetoric has the potential to obscure any real insights into OER use in the global south.

India’s government has supported OER initiatives in both policy and practice. In 2008 the National Knowledge Commission (NKC) called for a ‘national econtent and curriculum initiative’ to stimulate the creation, adaptation and utilization of OER by Indian institutions and the leveraging of OER produced outside India. In 2013 India gained its own national OER repository (http://nroer.gov.in/home/), extending the OER provision by repositories such as the Indira Gandhi National Open University (IGNOU)-hosted e-GyanKosh (http://www.egyankosh.ac.in/). Open educational practices (OEP) have also been nurtured, for example through the Wikimedia India Chapter and Creative Commons India. Even so, to date there has been no major survey of OER use in India. This paper reports the early findings of research intended to address this lack of empirical evidence through a pan-India survey of OER use, impact, and attitudes towards openness. The study builds on existing research around OER in India (e.g. Das, 2011; Perryman et al, 2014; Bucker et al, 2014; Perryman, 2013 Sharma et al, 2014).

2. Methods

Our research comprises four phases:

Phase 1: An online survey pilot leading to initial findings and survey fine-tuning (reported in this paper);
Phase 2: Disseminating the fine-tuned online survey to a wider audience across India;
Phase 3 (conducted simultaneously with Phase 2): Distributing hard copies of the Phase 2 survey across India;
Phase 4: Data analysis and follow-up interviews.

The Phase 1 survey was conducted using Survey Monkey (https://www.surveymonkey.com/). Three versions were created, one each for educators (https://www.surveymonkey.com/s/india-educators), formal learners (https://www.surveymonkey.com/s/india-students), and for people in neither of those categories (https://www.surveymonkey.com/s/india-general). The surveys are dual language (Figure 1), created in English with a Hindi translation.

Figure 1: Example of the dual language survey

<table>
<thead>
<tr>
<th>2. आप के बारे में [About you]</th>
</tr>
</thead>
</table>

1. आपकी उम्र कितनी है? [What is your age?]
- 15 वर्ष से कम [under 15 years]
- 15 - 18 वर्ष [15 - 18 years]
- 19 - 24 वर्ष [19 - 24 years]
- 25 – 34 वर्ष [25 - 34 years]
- 35 – 44 वर्ष [35 - 44 years]

2. आपका लिंग क्या है? [What is your gender?]?
- माले [male]
- महिला [female]
- उच्चत्व [transgender]
- अन्य (कृपया अंश दें) [other (please specify)]

3. आप कहाँ रहते हैं? [Where do you live?]
- भारत के बाहर (कृपया देश दे) [outside India (please give country)]
The surveys use many of the questions developed by the OER Research Hub (http://oerresearchhub.org/collaborative-research/instruments/), allowing for global comparisons to be made, with the addition of questions pertinent to the Indian context. The surveys were promoted via social media and email.

2.1 The sample

Figure 2 shows the age and gender of respondents, indicating that educators tend to be older than other respondents and that there are a greater proportion of women amongst the educators than the other categories. Figure 3 shows the geographical distribution of the sample, who are fairly evenly spread across India but with a large concentrations of respondents in the National Capital Territory of Delhi, in Karnataka (the home of Karnataka OER - http://karnatakaeducation.org.in/KOER/en/index.php/Main_Page) and in Maharashtra, with its capital Mumbai.

Figure 2: Age and gender breakdown across respondent types

Figure 3: Geographical distribution of survey respondents across India
The majority of survey respondents are very well qualified, as shown in Figure 4. Even so, 26% of the formal students only have a school-leaving qualification.

**Figure 4: Sample breakdown by qualification**

<table>
<thead>
<tr>
<th>Highest educational qualification</th>
<th>Percentage of respondent category</th>
</tr>
</thead>
<tbody>
<tr>
<td>School-leaving qualification (16-18 years)</td>
<td>26%</td>
</tr>
<tr>
<td>Vocational qualification (i.e. practical, trade-based)</td>
<td>0%</td>
</tr>
<tr>
<td>College diploma or certificate</td>
<td>0%</td>
</tr>
<tr>
<td>Undergraduate Bachelors University degree</td>
<td>43%</td>
</tr>
<tr>
<td>Postgraduate Graduate School University degree</td>
<td>92%</td>
</tr>
<tr>
<td>No formal qualification</td>
<td>0%</td>
</tr>
</tbody>
</table>

All categories of survey respondent indicate that they connect to the Internet in multiple ways, with most using their own devices and almost all able to access the Internet at home (Figure 5). This is a stark contrast with the overall level of Internet connectivity in India, where just 19.7% of the population had Internet access in 2014 (Internet World Stats, 2015). Again, though, the degree of internet access amongst the sample is not surprising as the Phase 1 survey was conducted online. The high level of smartphone use is in line with a country-wide dominance of smartphones as a main method of Internet access.
access, with a recent report showing that 69% of Web traffic in India is via a mobile device (Mander, 2015).

Figure 5: Internet connectivity and device use across respondent type

![Internet Connectivity and Device Use Across Respondent Type](image)

3. Findings

Our findings show an emergent picture of how a group of largely well-educated people, with good levels of digital literacy, are using OER for teaching and learning, and suggest that OER are having a positive impact on educators’ professional development and on formal students’ study performance.

3.1 OER use and digital literacy

Figure 6 shows that the majority of respondents in all survey categories have been using OER for over 2 years while Figure 7 offers an insight into the relationship between Indian and international OER repositories, showing that educators appear to be using Indian OER sources more than non-educators and that formal students are using a wider range of OER sources than educators, and are doing so more extensively.

Figure 6: Length of time using OER
Figure 7: Sources of OER, by category of survey respondent (note * indicates Indian repository/website)
Informed by Perryman’s (2013) findings that Indian teacher-educators’ lack of ICT skills can be a barrier to their using OER we used the OERRH digital literacy indicator questions to assess respondents’ ICT skills and practices. The collected data (see Figure 8) shows a fairly high level of digital literacy across all respondent categories, though with fewer educators, proportionately, than other respondents across many of the digital literacy areas.

**Figure 8: Digital practices across all respondent categories**
3.2 Open educational practices

The OERRH global research has foregrounded questions about whether people use OER differently from other online materials (see De los Arcos et al, 2014, pp. 13-16). Accordingly, our survey included questions about respondents’ open educational practices.

Figure 9: Open educational practices across all categories of respondent, including comparison with the OERRH global dataset
Figure 9 shows fairly high levels of OER adaptation across all respondent categories, though slightly lower than the OERRH global figures (see De los Arcos et al, 2014, pp. 13 - 16). The Indian educators also appear more engaged in OEP such as resource creation and publishing on a Creative Commons (CC) license than are the other Indian survey respondents and educators in the OERRH dataset. Responses to an open question on the impact of OER on sharing practices revealed that many educators share more often and more widely as a result of using OER:

‘Now I frequently share my notes/educational materials/knowledge on social media.’
‘I have started feeling that there is no harm in sharing my powerpoint slides or other study material across the globe.’
‘I try and create educational material that is well researched, student friendly, age appropriate…and also send it across to the class teacher of my daughter’s school for open distribution’.

3.3 Exploring educators’ use of OER in more depth

The surveyed Indian educators span all education sectors, 64% have been teaching for over 10 years, 100% use OER for professional development reasons and 92% for use when teaching or training in an educational institution. In addition, 46% suggest that they use OER to improve their non-native language skills.

Educators were asked both about their aims for using OER and about the impact of their OER use. Figure 10 sets their responses in a global context, comparing the Indian educators’ answers with three OERRH respondent types:

- Educators using OpenLearn (http://www.open.edu/openlearn/);
- Educators using Saylor.org (www.saylor.org);
- Educators from the Virtual University for Small States of the Commonwealth (VUSSC) (www.vussc.info).

Figure 10 shows that the Indian educators are not only using OER within their teaching; they are also using them to develop their professional practice. Interestingly, there is parity between India’s educators and educators from VUSSC nations, many of which are currently classified as low-income, or developing
countries. For example, both use OER as classroom assets to a much greater extent than do the OpenLearn- and Saylor.org-using educators. In addition, the Indian and VUSSC educators show much greater use of OER for pedagogical development, for increasing educational inclusion, and for subject-related development. Possible reasons for this include a scarcity of high quality learning materials and pedagogical development resources in countries such as India and many of the VUSSC nations.

Figure 10: Comparing Indian educators’ aims for using OER with those of educators in the OERRH dataset

The 78% of Indian educators indicating that they use OER to compare others’ teaching materials with their own in order to assess their materials’ quality suggests that using OER can lead to educator reflection and pedagogical change. Indeed, the data collected on the outcomes of educators’ OER use (see Figure 11) show that 77% of the Indian educators feel that using OER has led to their reflecting more on their teaching and 76% say they use a broader range of teaching and learning methods as a result of using OER (again higher than the OpenLearn- and Saylor.org-using educators, but showing parity with the VUSSC educators).

Figure 11: Comparing the impact of OER use on India’s educators with that for other educator groups in the OERRH dataset
4. Discussion

This pilot study has raised questions about levels of engagement with OER in India. Some indicators put India ahead of the global average (for example adapting OER and publishing content under a CC licence). However, responses to open questions in the survey reveal OER are largely valued for being free and convenient over their being infinitely adaptable resources that can be re-published. One educator commented: 'By using OERs...educators and institutions can avoid postal delay, errors in printing of material, problems due to quality of paper etc.' Another explained: 'It reduces the weight of the books we carry! We just send files through internet to those who are needy of this.'

4.1 A new model for mapping OER engagement in development contexts

Mapping the OER engagement findings for the Indian survey respondents against Wild’s (2012) OER Engagement Ladder (Figure 12) would identify their level of engagement as mostly ‘low’. However, Wild’s model does not allow for consideration of contextual factors enabling and inhibiting OER use in development contexts.

Figure 12: OER Engagement ladder (Wild, 2012)
to a reliable, always present, fast connection. Indeed 76% of educators and 83% of formal students suggest a slow Internet connection is a barrier to their using OER.

Figure 13: Challenges to OER use in India

We are currently developing a new model intended to better capture the rich contextual factors inhibiting and enabling OER use and OEP in the global south. For Phase 1 of our research we have limited the model to covering technical inhibitors to OER use, for example Internet connectivity and computer access. Figure 14 shows the emergent model. Quadrants A and C are generally representative of the global north-specific OER engagement ladder (Wild, 2012), grounded in more enabling factors than inhibitors (for example fast, reliable Internet access and continuous electricity), and with movement from C to A showing progression to a greater engagement with OER. To more widely represent ‘true’ OER engagement in both the global north and south we have added quadrants B and D, which acknowledge the impact of inhibitors such as slow/unreliable Internet access.

Figure 14: Emergent model for understanding engagement with OER in a development context
Figures 15, 16 and 17 show the data from the three surveys mapped against our emergent model. The size of each circle is representative of the percentage of people showing a particular level of engagement and inhibitor(s) and the colour indicates the type of OEP being assessed, as shown in the legend accompanying each model. The figures cover three technical inhibitors identified as barriers to OER use:

- Slow Internet connection
- No Internet connection
- No access to a computer

Survey respondents who reported all three as challenges are classified as highly inhibited, those who reported one or more of these challenges are in the middle category, and those who did not report any challenges are classified as highly enabled.

Looking at Figure 15, we can see from the blue circles that a large percentage of General survey respondents adapt OER and experience significant inhibitors in terms of Internet connectivity and computer access. Overall however, General survey respondents show limited engagement with OER and a fairly even spread of inhibitors to OER use.

**Figure 15: Mapping the General survey respondents onto the new model**
Figure 16 indicates that educators show greater engagement with OER and more extensive OEP than respondents completing the General survey. However, educators also appear to be experiencing greater inhibitors to OER use than the General survey respondents. The proportion of educators in quadrant B is particularly impressive, showing fairly high engagement despite a similarly high level of inhibitors.

**Figure 16: Mapping the Educator survey respondents onto the new model**
Figure 17 shows that formal students have the highest level of engagement with OER of the three respondent categories, together with the lowest level of inhibitors. This may be due to the fact that the surveyed formal students are generally younger than the educators. Further research would be needed in order to investigate individual case studies and make more extensive comparisons.

Figure 17: Mapping the Formal Student survey respondents onto the new model
It seems reasonable to assume that results appearing within quadrants A, B and C of Figures 15, 16 and 17 are reliable. However, the results in quadrant D require further investigation in order to better understand the true nature and effect of the inhibiting factors. The model will be further developed in future phases of our research to cover other inhibitors that may impact on OER use and OEP in India, as identified in Perryman’s (2013) study of the potential of OER in Indian teacher-education system, for example attitudes to expertise and to sharing, ICT skills, and differences between the social and professional use of ICT.

4.2 Future refinement of the survey

Out pilot study has resulted in our identifying areas of each survey that could usefully be fine-tuned to better achieve our research aims. For example, although the pilot survey was dual language 96% of respondents indicated that they speak English and only one respondent wrote open question answers in Hindi script. In addition, several respondents commented that they would have preferred a less cluttered, English-only survey. We therefore plan to offer two versions of the survey in future - one English and one Hindi. We also plan to add questions that will give us a more nuanced view of the quality of Internet access experienced by survey respondents and of the ways in which they use their ICT skills (following Perryman (2013) and Chattopadhyay (2010, p. 7) who suggest that even when Indian educators are using Web 2.0 tools for social/leisure reasons, they remain reluctant to integrate these tools within their teaching and professional development).

5. Conclusion

To date, the pan-India survey findings have shown how a quite tightly defined group of ICT literate people are using OER. However, the conclusions reached on the basis of studying this population have the potential to inform future development of OER for use across India’s education sectors while also being relevant beyond the Indian context. In the coming months the respondent base for the online pan-India survey will be broadened through additional survey promotion. Hard copies of the survey will also be distributed throughout India. Future research will cover this extended sample in addition to exploring some of the findings in greater depth through focus groups and interviews with educators and learners.

A key finding of this study is the reworking of Wild’s OER Engagement Ladder to be more appropriate to understanding OER use and OEP in the global south in acknowledging possible differences in the priorities and possibilities that exist in development contexts. We hope this model can be the basis for others to gain a more nuanced view of OER engagement in the developing world.

References


