

User-Generated Content's Impact on the Sustainability of Open Educational Resources

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Abstract

Sustainability is a fundamental requirement to ensure long-term viability of open educational resource (OER) initiatives. To afford technology upgrades and author costs, most of the existing initiatives are heavily reliant on continued funding; limiting OER models to invest in commissioned works. User-generated resources come as a solution to this problem, although a fairly novel concept to the area of child literacy. Consequently, there is little evidence available in earlier literature on their use for education. With online platforms such as social media and gaming sites encouraging users to collaborate and create original content, user-generation is a potential instrument for circumventing costs and achieving rapid dissemination of works. However, it also presents a significant downside – questionable quality. This paper discusses the use of user-created OERs for literacy, exploring the quality and sustainability implications that arise from this creation method and the measures undertaken by an Indian organization to overcome the same.

Keywords: Open educational resources, user-generated content, quality assurance, cost, sustainability, child literacy

Introduction

With the rapid growth of technology, cost and rising demand for educational materials in developing nations (James, 2014; Stork, Calandro & Gamage, 2014) like India, OER-creating organizations are required to keep up with the constantly changing environment. For this reason, such organizations are continuously attempting to identify pathways through which sustainability issues can be overcome and organizational quality maintained, with consideration of the ethical and social responsibilities (Hertz, 2011).

Sustainability is one of the key concerns for OER providers since it is indispensable for the prolonged stability and viability of OER initiatives, particularly during periods where financial resources are scarce (Farisi, 2013). A major limitation of OER business models (Olcott, 2012a; De Langen & Bitter-Rijkema, 2012) is the fact that most of the present day OER initiatives heavily rely on constant sources of funding (Johansen & Wiley, 2011). With increasing online presence, active interactions on social platforms (Pitt, Watson, Berthon, Wynn & Zinkhan, 2006; Di Benedetto, 2014), and a growing rate of user-generated content (Mallapragada, Grewal & Lilien, 2012), the possibility of creating OERs is gaining attention and interest. At the same time, the idea of content being created by public entities has also given rise to significant reliability and quality questions (Ingawale, Dutta, Roy & Seetharaman, 2013).

The objective of this paper is to engage specifically with the case study of Pratham Books and its open access creation and distribution model. Its technology and creation costs are significant and funding is limited or temporary, with persisting quality concerns that require innovative solutions. The study found that barriers are being circumvented in two key ways: by using volunteers and platform users to create and maintain materials online; and by constantly engaging in fund-raising measures.

This paper reflects on the complex interplay between the need to increase access to educational materials and the need for quality assurance and sustainability measures.

Methodology

This discussion is derived from a doctoral research, which sought to explore the role and specific ways in which OERs could impact primary education in developing nations, through the qualitative case study analysis of three OER-providing organizations. This paper solely discusses the case of one of the three organizations, Pratham Books, a children's books publisher, established in 2004 with three key aims: produce good quality multilingual books that are low-cost and easily accessible (S. Singh, personal communication, May 18, 2016). Being a small organization, it did not have the time or the manpower to cater to the growing demand for their books. This problem resulted in the creation of StoryWeaver, an open platform which has been encouraging openly licensed user-generated literacy content (see Table 1). This approach is unprecedented in the education field, although this is not uncommon to social media and gaming platforms.

Table 1: Overview of Pratham Books' platform StoryWeaver

Nature	Funding	Key features	Key audience	Impact (Statistics)
An online platform established by Pratham Books in 2016 to provide unlimited access to free children's books.	Grants (e.g. Google)	Read	Librarians	11,053 stories
	Donations (e.g. Oracle)	Create	Educators	1,749,018 reads
	Pratham Books	Download	Parents	Books in 134 languages
		Store	Translators	
		Translate	Content creators	
		Open licensed	Non-profit organizations	
			Education technology organizations	
			Publishers	

Information source: Personal interviews held at Pratham Books in May 2016 and the StoryWeaver website (25 January, 2019)

Six key members from Pratham Books, who were heavily involved in the StoryWeaver platform's content creation and distribution were approached and interviewed for this research (see Table 2). The research was conducted at the Pratham Books headquarters, in Bangalore, India. While research participants were very cooperative and informative, one of the key challenges was the inability to interview more than six members, due the size of the organization. Another difficulty was the researcher's inability to undertake multiple school visits as planned earlier to overview how Pratham Books' resources are used, due to the election and school holiday period in India.

Table 2: Interview participants

Name	Role	Interview type	Consent type	Data type
Ms. Suzanne Singh	Chairperson, Pratham Books	Face-to-face interview	Written consent	Audio recording
Ms. Mala Kumar	Editor, Pratham Books	Face-to-face interview	Written consent	Audio recording
Ms. Purvi Shah	Digital Head, StoryWeaver	Face-to-face interview	Written consent	Audio recording
Ms. Maya Hemant	Community Manager, StoryWeaver	Face-to-face interview	Written consent	Audio recording
Ms. Yamini Vijayan	Content Manager, StoryWeaver	Face-to-face interview	Written consent	Audio recording
Ms. Menaka Raman	Social Media Manager, StoryWeaver	Face-to-face interview	Written consent	Audio recording

The semi-structured interviews covered a range of issues, comprising of a series of questions on the ability of OERs to narrow literacy gaps, the existing barriers to OERs, intellectual property challenges, funding models, and the potential of OERs in transforming the primary education space. Interviews were conducted either in participants' offices, lasting between 1 to 2 hours. Naturalistic observation also formed a part of the data gathering phase, with notes being made of the work environment. Following data collection and data coding, three key themes emerged: literacy, language and culture; access, distribution and pedagogy; and user-generation, quality and sustainability. The third theme forms the discussion of the present research paper.

This research suggests that OERs are favorable to the educational theory, referring to the alternate pathways through which education could be propounded, reflected by many eminent early theorists such as Vygotsky (1978), Dewey (1916), Piaget and Inhelder (1967) and Illich (1971). Based on their theories, this paper proposes that OERs have the potential to overcome many of the challenges associated with distribution and access, however also recognizes that the creation and assurance of quality materials is still necessary. Having said that, the original research from which this paper is derived from, was an observational type of study without a high emphasis on theory. It was a pragmatic study, in which interpretations and conclusions were developed following the data gathering phase, as validated by the grounded theory research approach (Dillon, 2012; Strass & Corbin, 1990; Glaser & Strauss, 2017; Corbin & Strauss, 2008). For this reason, this paper will not have an in-depth discussion of theories.

Results

The results of this study suggest that while OERs can be a potential instrument in helping OER providers achieve increased creation of works, rapid dissemination and the circumvention of costs, they also present a two-fold problem: this type of a creation method carries quality implications combined with the constant need for funding to sustain the business model and afford quality assurance undertakings. This section details these implications, in parallel to the measures undertaken by Pratham Books to overcome the concerns caused by user-generation, which relies on the public

for content, in order to determine the system's efficiency and suitability for literacy and primary-level education. The findings retrieved are discussed under key themes that emerged during the study.

The need for continued fundraising to sustain the business model

Funding plays a substantial role in determining the sustainability of an organization. The root problem that led Pratham Books to opt for the utilization of users and volunteers to create and disseminate content is the cost involved in the physical publishing and distribution of books and the lack of sufficient physical distribution channels. However, having found an alternative to these issues, the cost of maintaining their business model and their OER-providing technology remains: the StoryWeaver platform's long-term sustenance would not be feasible without sufficient funding. Consequently, ensuring the acquisition of grants, continued donations and support are of utmost importance to such organizations.

They had this Google Impact Challenge Awards and we were one of the top 10 finalists. We got a small grant that powered all our digital work and enabled us to get this platform in place. We need to now look at funding for other resources that we want to create as and when [required]... (Shah)

For instance, Sir Ratan Tata Trust (SRTT) funded us for 3 years. Each donor definitely has some reason in specific for which they want to donate. Most donors [and] Corporate Social Responsibility groups (...) work with a cause. So, if someone funds us this year, I am not sure whether they want to fund us again next year or whether they want to fund someone else. The fact that people (...) come back to us shows two things: (...) that the books that have reached children are important enough for them to fund a second time. (...) The need is so high, that they are happy to come back to us. It is a challenge. You need to keep finding more and more people. (Kumar)

Funders tend to opt for the more "rewarding" projects and this limits Pratham Books' capacity in managing the direction of its enterprise. Therefore, acquiring funding and dealing with the expectations of funders are challenges that the organization continually faces. Even though funding creates the material environment that enhances the creation of quality organizational outcomes, the organization's freedom in using the funding as it sees fit can be heavily constricted. For this reason, the organization resorts to multiple and varied methods of fund-raising. The following extract gives the example of how crowdsourcing and partnerships were used for this purpose.

We also started the Donate-A-Book platform. That is like crowdsourcing of funds to get books out to children. We need people to send it out farther and farther to children who need them. Someone sitting in tribal Odisha will not even know of a need for books. So, how do we ensure that that child gets a book? Because, some NGO working in that area would have heard about us or we would have heard about them. We'd ask them to raise funds through the Donate-A-Book platform. They can raise funds, get our books and distribute it to those children. (Kumar)

In order to remain a sustainable operation, Pratham Books acknowledged that being a full-fledged philanthropic model is not sufficient. Often philanthropic income is used to cover the costs of employing the key staff and technology. This implies that volunteers and an online public user community then form the bulk of the resource creators.

We have a part philanthropy and part revenue model, where the book development cost; that is the cost of authors, illustrators, translators, reviewers, layout, design, and so on, are covered through philanthropy. (...) We've developed a model for producing multilingual, good quality low-cost books (...). We've demonstrated that this is a model for other publishers as well. From a model perspective, I think we are a sustainable model. (Singh)

This business model has created a two-tiered model of online educational content: those funded and created by experts and those unfunded and created by volunteers or the public. This again raises the specter of transparency and quality assurance. However, it is only in this manner that OER providers like Pratham Books can maintain their social organization and business model.

Using public opinion and attribution as cost-free quality assurance tools to establish end-user trust

Pratham Books' example reveals that public opinion and feedback can be cost-free alternatives to traditional content reviewing options, which are often time-consuming and require committed expert reviewers. The respondents of this study suggested that this has been aiding them in quality assurance, enabling a transparent relationship between the organization and its stakeholders.

So, we have a lot of users who come onto the site and translate stories from whatever language to another language. We have had instances of someone else mailing us and saying, "you know, I read this translation, there are grammatical mistakes over here" and that kind of thing. So, we accept and we say yes and as the site grows, we can't of course be sitting and correcting everything. (Raman)

Encouraging the platform's users to partake in the quality review process is helping increase their engagement and ownership of the OER platform, whilst enabling quality to be augmented without any additional cost to the organization.

Similarly, Pratham Books also uses attribution to build the trust of end-users on the quality and information reliability of materials. At the same time, this also creates trust within the contributor community, which leads to a rise in the number of volunteers.

Because we are so mission-focused and so transparent in the way we function, authors are willing to work for us. (Singh)

Pratham Books has thus witnessed a significant growth in user contributions and involvement in their platform through their willingness to credit all contributors at the end of each created resource, fortifying the organization's image, dedication to their mission and transparency in the eyes of the public. This has also largely added to their efforts in their outreach goals, which is necessary to ensure the ongoing and increase of users joining the platform as well as content creation on the platform.

The potential of user-generated OERs in eliminating costs whilst achieving greater outreach

While the sustainability of technology is key to the sustainability of Pratham Books' open platform, ensuring the continued production and dissemination of resources is also equally important for its prolonged sustenance. For any small organization or publisher with limited funding, this would pose a problem due to the significant physical production and distribution costs involved. To remain sustainable whilst achieving growth in terms of increasing content and the user base, Pratham Books relies on user-generated OERs.

In the digital market, user-creation is allowing greater distribution of works, enabling widespread interactions between consumers and creators. As exemplified by the below extract, it is forming an entire value chain of content, which involves production, distribution and consumption (Blackman, 2016).

StoryWeaver, (...) at launch had 800 books in 24 languages. Now, I think we are up to 1600 in some 35–36 languages. About 800 books have been created by the community on top of the original content. (Singh)

These are all user-generated. Nothing that Pratham Books or StoryWeaver have contributed, except for releasing the English version. And if you look at the footprint of the story one, it is the language reach, right? (Shah)

Pratham Books sees increasing possibilities for OERs in multilingual developing nations, considering that their resources are being translated and modified by users from different cultural backgrounds within and beyond India, capturing new audiences and markets. Entirely created and disseminated by users, the organization is saved from time, labor and costs that may otherwise be required to produce and distribute books on their own.

On the [StoryWeaver] platform, we have... a disaggregated book so (...) you have a reader-view, where you can read the book like this or you can see the images of the book separately and write a whole new story or translate or re-level a book, by either making the story more complex or simple. So, several tools have been provided to enable community creation. (Singh)

The last time we did a story-telling... the One Day One Book session, that time the book was only available in 5 languages. Because it was an open license book and people were encouraged to translate it, they translated it in 22 languages. (Hemant)

Therefore, the possibilities and flexibility to tailor resources to suit specific needs, languages and cultural contexts have certainly encouraged minority groups in India such as indigenous tribal communities to utilize OERs for literacy education and become OER creators in their own right on the StoryWeaver platform. Pratham Books is achieving mass impact through OERs, reaching even the most remote locations, yet, it is still looking to find an efficient system to measure, control, and guarantee the caliber of every resource being created on its platform.

While user-generated content increases dissemination pathways, it also raises quality concerns

Encouraging a user-run OER platform has not only helped StoryWeaver generate large number of online storybooks but it has also allowed the generation of individual elements such as images, which are systematically stored in an image bank for future re-use by users for free.

We had a set of 60 words and we told illustrators to pick any 6 words out of our collection of words and create 6 frames, meaning 6 illustrations and tell a visual story with no words. More than 70 illustrators drew 6 illustrations and sent it to us as a visual story. So, we were able to get about 450 new illustrations from the campaign. (Vijayan)

User-generated OERs come as a solution to the problem where professional quality authoring and illustrations are expensive, causing the employing or commissioning of professionals to be an unsustainable option for Pratham Books. At the same time, expecting professional quality content creation out of volunteers or online users is also unreasonable and unlikely.

So, these are the ongoing challenges: to find the best people in the field [translators, writers, illustrations, etc.]. So, we don't select writers unless we need to commission a story. Most of the stories come from people who want to write for us. So, they submit stories and we, on an average, get at least one story everyday. (Kumar)

Thus, a reliance on users or volunteers to create, modify and translate OERs does mean that quality of the content is less certain. Pratham Books acknowledges this problem but struggles to balance the sustainable creation of novel quality resources with the use of unaccredited contributors.

At several instances, the research participants stated that partnerships and collaborations with external entities were few of the main factors that led to the increased dissemination of OERs. Pratham Books views partnering with cause-driven organizations as a pathway through which a different and much larger audience could be captivated (Y. Vijayan, personal communication, May 18, 2016). The involvement and support of another organization also helps in adding value and a quality mark to every resource being shared through the collaborative initiatives, in the eyes of the end-users. That being said, not all consumers seek quality in the resources they find.

In a context where people lack access to knowledge, resource quality is only secondary

Although the case study organization engages in a filtering and reviewing process to help end-users, quality is often left for users to discern. One of the factors that often influences end-users in evaluating resource quality is its price.

Anything that is free, may not have a value. (Kumar)

The problem lies with people judging OERs' quality based on other products in the market, where quality is determined by the price paid. That being said, where children have poor levels of literacy and limited or no access to education, the mere availability of any resource can be beneficial to their development (S. Singh, personal communication, May 18, 2016). Respondents acknowledged the difficulties involved in guaranteeing quality whilst pursuing the mission of enhancing access to materials simultaneously. Creating access hence is a priority and prime motive for OER providers like Pratham Books, pushing quality to the second place. The following extracts illustrate the growing demand for the StoryWeaver platform's OERs, with consumers considering access before quality.

We launched with 24 languages, we are now at 38 in just 8 months and every single language that we added is on user request, which is the power of open. It is increasing. (Shah)

Aiming to be a catalyzing agent for creating more literacy content for children, Pratham Books engages in multiple measures to address the quality issue. Particularly, recognizing the prevailing quality questions surrounding user-generated OERs, the respondents of this research elaborated the methods they are currently employing to operationalize and ensure quality. Since StoryWeaver's inception, the organization has been attempting to find ways of distinguishing quality content from the rest. For instance, it has created filters to differentiate between materials created by different categories of users, as the below extract details.

There are processes to find certain kinds of quality content [on StoryWeaver]. For instance, you can search by publisher. There are different categories. One is Pratham Books content, which means that (...) this is quality content. Then there is community-created content. There are so many users, so we cannot say that this is quality content. It is for the user to decide. Hopefully, we are looking at ways in which we can do a quality check even for this so that the user sees more relevant and appropriate content. (Vijayan)

We are trying to develop a reviewing system where we have users who are very fluent in a language and who would like to come forward and review some of our work created by our community. They give that story a rating. (Raman)

Since the data gathering phase of this research, the platform gained "editor's pick" and "recommended" filters, giving end-users the possibility to choose reviewed content without having

to determine quality or spend time in curation. The platform also allows users to rate the resources and provide an opinion in the comment section of each resource; adding another layer of quality filtering for other users to benefit from. Therefore, although quality is not an imminent concern for several consumers, it is a concern for the organization, to which quality reflects its brand image and is therefore pressurized to find an effective remedy.

Discussion

Three key discussion points emerge from the above results. The first one outlines the cost implications for OER organizations like Pratham Books, which are divided between the will to invest in quality and the necessity to remain a sustainable operation. The second discussion point explains how the cost and sustainability issues are circumvented through the driving force of users, which also serves as an outreach and impact mechanism. The third point discusses the consequences of utilizing a public community of practice for the generation and dissemination of children's resources, giving rise to serious quality concerns, in ways that it does not in other contexts, such as social media (Mallapragada et al., 2012; Noguti, 2016; Douglas, 2014) or gaming (Hayes, 2008).

Cost and OER Sustainability

The cost of printing and distributing educational resources is prohibitive for developing nations such as India where a large proportion of the population lives in rural settings. For Pratham Books, the use of OERs through an open and collaborative platform is the only sustainable option with the ability to extend outreach and augmented access to child literacy materials. Nevertheless, this method too involves a certain cost in terms of technology maintenance (Aroyo & Dicheva, 2004; Kinshuk, Huang, Sampson & Chen, 2013). In addition, it also has an impact on the organization's decision-making about the creation and quality assurance of resources.

Philanthropic fundraising is an approach that is widely used in the higher education sector, which constantly endures cost-related barriers and limitations in government aid received (Rohayati, Najdi & Williamson, 2016). As a result, constantly seeking funding from multiple sources is a strategy employed to ensure sustainability and competitiveness (Rohayati, Najdi & Williamson, 2016), as in the case of Pratham Books. Thus, financial sustainability is highly critical to OER organizations. Yet, scholars in the area identify a severe neglect of this in the existing literature on OERs (Larson & Murray, 2008). However, in this regard, this research draws attention to two important points. Firstly, it is clear from this study that the case study organization is aware and focused on the long-term sustenance of its model. Secondly, it is also apparent in the literature that OER initiatives that do focus on their self-sustenance and on being business models that support an open online presence are often times the most successful in attracting long-term financial aid from funders like foundations, government bodies and other external agencies (Olcott, 2012b; Leahy, 2009; Johnstone, 2016; Jacobs, 2007). Pratham Books reflects this attitude very clearly; consistently sourcing funds through a variety of pathways like crowdsourcing, grants, donations and other forms of sponsorships to maintain its model.

Corporate Social Responsibility (CSR) has risen into becoming a major strategic contributor to the value of ventures on a global scale, from being viewed as a mere philanthropic movement. Business models too have developed genuine measures to combine their corporate governance and ethical behavior, to be able to stimulate the performance of their business and public image (Xuemel & Martin, 2012). In this context, Pratham Books is in an optimal space to access such funding, given its social mission and open access nature. However, reliance on such funding sources also

implies that OER-providing organizations are obligated to tailor their objectives and works around the expectations of external stakeholders and irrespective of the success of the partnerships or collaboration, there is no guarantee that funding will be continued.

Accessibility and OER Outreach

Ensuring the equitable access to knowledge is a challenge for many developing nations due to cost, infrastructure (Harttgen, Klasen & Misselhorn, 2010; Ally & Samaka, 2013) and the insufficiency of distribution channels (Baral, 2012). OERs have the potential to address these problems and achieve large-scale distribution due to their flexibility: for instance, they offer the possibility for offline use of works (Oyedemi, 2015; Darries, 2004), as low-resolution freely downloadable and printable resources (Mitra & Rana, 2001; Mehta & Shree, 2015). In developing nations like India, OER provision for the purpose of increasing access to quality educational resources is uncontroversial. The complexity lies in sustaining a business model, which is open access and thereby available to the public for free use and re-use. Such a situation demands OER organizations to depend on volunteers, whether offline or online, as well as on funders to support the creation of good quality resources and achieve increased outreach.

With the rapid advancements in technology, book-publishing organizations like Pratham Books are shifting from print to electronic provision of materials; with it is an increasing recognition and need for innovation, in order to ensure corporate sustainability. However, this development has been uneven, varying depending on the location and the efficiency of technological infrastructure of a nation. The results of this study illustrated that Pratham Books has had to align its online presence with a capacity to offer users an offline consumption option. These include online and offline user-friendly resolutions that are viewable online, downloadable, shareable and printable by anyone. This is verified in the literature, wherein it is argued that a “web-centric environment will vary in both shape and substance depending on the country and region involved” (Xuemel & Martin, 2012, p. 104). The literature also defines this approach as an “online-offline strategy”; a method where both online and offline creation and consumption are combined to create increased accessibility, leading to high outreach rates.

As the results of this study also indicated, being an OER provider, Pratham Books uses Creative Commons (CC) licenses to increase the possibilities for end-users to access, modify and share OER content (Garcelon, 2009; Bissell, 2009), to achieve two interrelated goals: to maintain its viability as a business model and achieve accelerated and increased outreach. This has also allowed the organization the flexibility to make use of copyright expired materials, as a means of expanding and populating their content base, which in turn serves to reach more consumers. Additionally, open licensing is also used to avoid the chances for copyright claims by creators over their works as well as to minimize the chances of copyright infringement by users (Koščik & Šavelka, 2013; Bannister, 2011; Ferullo & Soules, 2012). Simultaneously, Pratham Books also sees the benefit of persuading publishing houses and other literacy organizations to use the StoryWeaver platform to upload and share their works for increased accessibility to content and dissemination.

Quality Assurance and OER Success

This study seems to align with scholarly works that argue that although user-generation has the power to multiply the creation and distribution of content and eliminate the costs of physical production, it still raises quality and information reliability questions (Ingawale et al., 2013). Consequently, user-dependent OER-providing organizations like Pratham Books are found to have considerable hurdles in ensuring the quality of their resources (Pawlowski & Zimmermann, 2007; Pérez-Mateo, Maina, Guitert & Romero, 2011).

Literature in the area strongly associates the success of open content repositories with the quality of OER content provided (Clements & Pawlowski, 2012; Cechinel, Sánchez-Alonso & García-Barriocanal, 2011; Tate & Hoshek, 2009). Quality sustenance starts from the content creation process and works in two parts: measuring the resource quality is one part of the creation process, while the other is the ability to sustain the generated resource's quality. Different forms of collaboratively created online content is published everyday in several thousands on the Internet. In such a case, it is only natural that evaluation, quality control and assurance are greatly expected by consumers. (Palavitsinis, Manouselis & Sánchez-Alonso, 2013; Downes, 2007).

The practice of transparency could definitely act as a key quality indicator with the potential to build and sustain the multi-directional relationships between organizations and their various stakeholders, whether internal or external (Schnackenberg & Tomlinson, 2016). In the literature, transparency is positioned as the cornerstone of trust for organizations (Masson & Udas, 2009; OECD, 2007; Liesegang, Albert & Schachat, 2008) and holds differing definitions for differing contexts. For instance, in the context of strategic alliances with external entities, the term is defined as the openness exhibited towards and between partners (Larsson, Bengtsson, Henriksson & Sparks, 1998). In the case of electronic markets, it is defined as the extent to which information is accessible and visible (Zhu, 2004). This research found that Pratham Books acknowledged the same, illustrated by its commitment to the incorporation of public opinion and contributor attribution.

Whilst the study of public opinion is not uncommon in academic spaces such as political science, which have abundant discussion on public trust and perceptions on public institutions and politics, literature on the relationship between public opinion and the quality of educational resources has been largely neglected (Fladmoe, 2012). However, attribution and its effect on success of OERs are discussed in prior works. One of the works in the area (Wicherts, 2016) outlines the main difference between traditional resources and OERs, with regard to the potential of attribution in denoting quality. For instance, traditional educational materials like peer-reviewed academic journals do not leave room for deliberation: end-users trust the quality of the published works on the basis of the journal's ranking and review process. Whereas, on OER content, it is the attribution that permits end-users to judge the quality of a resource based on the listed names of contributors and the number of people who have contributed (Wicherts, 2016).

Conclusion

This paper discussed some of the main challenges inherent in using user-generated content for literacy and education proliferation (Mallapragada et al., 2012), which despite being a solution to prevailing accessibility and dissemination issues, poses significant quality questions (Ingawale et al., 2013). Prior research suggests that quality holds a key role in the sustainability of OER projects (Clements & Pawlowski, 2012; Cechinel et al., Tate & Hoshek, 2009). Understanding that consumers greatly regard quality assurance, evaluation and quality control (Palavitsinis et al., 2013; Downes, 2007), Pratham Books has displayed evidence of its efforts through its reviewing and filtering processes, which help determine quality.

Aside quality, another main barrier that this study discussed is associated with cost and sustainability. To cover certain material development costs such as special commissioning charges and technology upgrade costs, such organizations are often pressurized to continuously raise philanthropic funds. (Annand, 2015; Hannon, Huggard, Orchard & Stone, 2014; Olcott, 2012a). However, to circumvent these costs, whilst still achieving the generation of novel content and wide distribution, a reliance on volunteers and online users is a necessity; both of which are required to

allow Pratham Books to create and disseminate content both online and offline, as well as cover a range of topics in multiple languages and divergent audiences, whilst also ensuring that their not-for-profit business model survives.

Moreover, this research acknowledges that the adopters of OERs and especially those using user-created content have a number of challenges to address. This understanding is in line with prior works, which insist the implementation of strong initiatives advocating the adoption of OER systems into the educational space, to suit the rapidly evolving learning needs and environments (Toledo, Botero & Guzman, 2014) could make a difference. At the same time, scholars also warn that the OER system is currently at an infancy stage in developing countries (Canbek & Hargis, 2015; Aydin & Ulutak, 2010), where the traditional educational system is more trusted for quality because of its history, hinting that competing with that established standard would be a challenge to be overcome.

Nevertheless, a few best practices can be drawn from the Pratham Books' case. First and foremost, since the StoryWeaver platform's launch in 2016, it has grown multifold due to its outreach measures. This has not only enabled StoryWeaver to increase its user base and multiply its online content in the form of derivatives but most importantly, it has been able to receive continued financial support from major donors and grants till date. This indicates that advocacy and marketing played a major role in not just promoting their work but also in establishing trust amongst end-users and funders. In this manner, Pratham Books has so far been able to sustain the StoryWeaver platform.

Secondly, despite quality concerns, Pratham Books has been utilizing user-generation to circumvent physical books creation and distribution costs. This means that the StoryWeaver model is a low-cost model, which only needs funding to sustain its technology, while sustaining and multiplying its content occurs automatically through user-generation. This could be a valuable best practice model for countries in need of a high impact-low cost solution to create access to educational resources.

Lastly, Pratham Books has established a number of partnerships with literacy organizations, publishers, schools, as well as with individual groups such as teachers and communities. Although partnerships and collaborations may not guarantee funding or the sustainability of the platform, they can help strengthen the brand, its trustworthiness and the possibility of being offered support. Therefore, the three key lessons drawn from Pratham Books' case could be valuable for both researchers and literacy content providers in trying to explore alternate sustainability models and pathways in augmenting access to literacy resources in resource-constrained countries.

In conclusion, while OER providers such as Pratham Books draw immense inspiration from higher education OER models such as MIT MOOCs on their creation and utilization of OERs, they do not have the capacity or resources to adopt a similar model due to funding constraints and lack of qualified or dedicated content creators. Moreover, the higher education system in developing countries like India only serves a very small proportion of the population, most of which is illiterate and living under the line of poverty (Ilie & Rose, 2016; Carnoy & Dossani, 2013). As a result, utilizing systems such as user-generation to minimize expense and maximum impact is working well for them. On that note, a number of researchers cite the lack of funding, inaccessibility and inadequate infrastructure to be common constraints for higher education institutions too, which hinder the promotion and sustainability of OERs (Anderson & McGreal 2012; Olcott, 2012a; Olcott 2012b; De Langen & Bitter-Rijkema, 2012; Cohen & Soffer, 2015; Sener, 2010; Joseph & Nath, 2013). Another significant problem associated with OER content creation at the tertiary level is the unavailability and resistance of academics in creating OERs due to time limitations, pedagogical concerns and peer influence (Cox, 2013). In such cases, higher education institutions investing in OERs could potentially benefit from researching and experimenting with user-generated OERs, with Pratham Books as a best practice model to overcome these problems.

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