Understanding Formal Localization of OER: Remixing United Nations Human Rights Resources in Ghana

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ABSTRACT

This article explores the formal localization of Open Educational Resources (OER) in Ghana, focusing on the remixing of human rights courses for youth and young adults. While working with an NGO that focuses on providing educational resources to low-bandwidth areas, partner teachers in Ghana remixed openly-licensed human rights content provided by the Geneva Office for Human Rights Education (GO-HRE) for local delivery. Localization is crucial to ensure relevance and accessibility of educational materials to diverse learners. By adapting materials through localization, educators can address cultural and contextual mismatches, thereby enhancing comprehension and learning outcomes for a wider range of students. This process acknowledges and respects the diversity of learners and promotes inclusivity in education.

This study examines the challenges faced by teachers in formal localization and identifies principles that guide effective localization practices. The research methodology involved qualitative interviews with facilitators who taught a human rights course using OER. The results revealed two main challenges of formal localization: conceptual newness and burdensome effort. Participants lacked awareness of the concept of remixing and open licensing, and they faced challenges related to the demanding nature of the localization process. However, two key principles for effective formal localization emerged: focusing on method and leveraging teacher knowledge. Teachers sought to localize the delivery and method of instruction rather than the subject matter, and they leveraged their own knowledge of students and pedagogical practice to adapt the content.

Results highlight the assumptions, implications, and recommendations for OER designers and researchers. Designers should consider the cultural and contextual differences between global and local contexts and collaborate with local teachers to facilitate effective formal localization. Informal localization, driven by social relationships and practical choices, is also recognized as a significant aspect of OER adaptation.

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INTRODUCTION

Access to quality education is a global challenge, especially in less affluent countries (Dembélé & Oviawe, 2007). Open Educational Resources (OER) offer a potential solution by providing free and accessible educational materials (UNESCO, 2002) that are accompanied by the 5R freedoms of Retain, Reuse, Revise, Remix, and Redistribute (Wiley, 2014), which allow them to not only be used "as is" but also adapted to local needs. To effectively use OER in diverse contexts, understanding the localization practices involved is crucial (Bradshaw & McDonald, 2023). Formal localization, as opposed to informal localization, involves deliberate modifications and adjustments to align OER content with local requirements and cultural nuances (Almendro & Silveira, 2018). This article explores the challenges and principles of formal localization, focusing on remixing human rights educational resources in Ghana. Examining these challenges and principles contributes to existing knowledge of OER localization, providing recommendations for facilitators, policymakers, and OER designers.

Research on OER has predominantly focused on the Global North, examining cost-savings, efficacy, and adoption barriers (Open Education Group, n.d.). However, in the Global South, the benefits and barriers are magnified due to the socioeconomic divide (Goodier, 2017; Toledo, 2017). For instance, while students in North America may grapple with the burden of textbook costs averaging $1,200 per year (The College Board, 2019), this amount is roughly equivalent to the annual salary of many educational professionals in Ghana, and as this economic divider is coupled with bandwidth and accessibility challenges, many learners in Sub-Saharan Africa might struggle to access any educational materials at all (Dembélé & Oviawe, 2007). Furthermore, in analyzing the OER usage patterns of some 7,700 faculty worldwide, de los Arcos and Weller (2018) found that faculty in the Global South tended to adapt OER content but were less inclined to share it, mainly due to internet connectivity and data limitations for uploading. This highlights the global divide between OER producers and users (UNESCO, 2005), and Veletsianos (2021) urges researchers to examine OER production and distribution closely, warning that without caution, OER creation and use may perpetuate inequities (p. 401). Cultural, linguistic, and technological disparities could make OER less accessible to learners in places like Ghana, reinforcing exclusivity over inclusivity and perpetuating existing inequities. This socioeconomic gulf accentuates the significance of localized approaches to OER adoption, and transferring OER from the Global North to the Global South presents challenges due to opportunity, access, and cultural and contextual mismatches (King et al., 2018), for which localization can be a reasonable solution.

CHALLENGES OF OER LOCALIZATION

Localization of OER in the Global South encounters several challenges. Firstly, the influence of social and political factors gives rise to conceptual newness, impacting OER practices in these regions. The interplay of policy, educator understanding, institutional location, and international issues further complicates the process of localization (Prinsloo & Roberts, 2022). Secondly, the effort involved in localizing OER is hindered by a lack of awareness, which affects the creation of OER at the local level (Marín et al., 2022). Moreover, a suite of factors including constrained access, permissions, awareness deficits, limited capacity, availability constraints, and varying degrees of willingness pose formidable barriers to the seamless integration of OER (Cox & Trotter, 2017). Yet, a particularly salient challenge arises from the cultural contextualization of OER. Translated resources originating from the Global North may also (perhaps inadvertently) clash with diverse cultural contexts, potentially eroding indigenous knowledge systems and cultural practices (Adeyeye & Mason, 2020; Aramide & Elaturoti, 2021; King et al., 2018). This divergence underscores the necessity for nuanced approaches to OER localization, sensitively attuned to cultural diversity.

OVERCOMING THE CHALLENGES OF OER LOCALIZATION

To overcome these challenges, it is crucial to prioritize awareness, support, collaboration, cultural adaptation, and contextualization, thereby facilitating effective OER localization in the Global South. By addressing these challenges and implementing the recommended principles, facilitators, policymakers, and OER designers can enhance the accessibility and relevance of educational resources, increase students' educational opportunities and quality of learning,

and allow facilitators to amplify their voices and increase their impact, both in their fields and in the world at large (Irvine, et al., 2021).

Ensuring equitable access to quality education is not only a fundamental right but also a catalyst for societal development and progress (Jemeli & Fakandu, 2019). By understanding how facilitators persevered through challenges to formally localize OER, international partners can work towards a more inclusive and empowering educational landscape.

METHODS

We conducted a qualitative study in Ghana, focusing on local facilitators' practices of localizing OER. Through in-depth, semi-structured interviews, we aimed to understand our facilitators' actual engagement in the formal localization of OER, specifically in remixing United Nations Human Rights Resources. This content was particularly interesting for the topic of study as it connects deeply with cultural realities (e.g., religion, ethics) in ways that other content might not and might therefore yield unique challenges and benefits for localization. Our focus was on participants' practical experiences rather than their beliefs or theoretical knowledge of OER, and our research question was "What remixing behaviors and challenges accompanied the adoption of GO-HRE human rights resources among teachers in Ghana?"

CONTEXT

The research project evolved from our work with Community Development Network (CDN), an NGO that connects people in low-bandwidth areas with educational resources in youth-led gathering centers. We, as researchers, collaborated with facilitators who were involved in teaching a human rights course using OER content. The research took place in various cities in Ghana where community gathering centers were more established, namely Kumasi, Accra, and Assin Foso.

RESEARCH METHOD

This study utilized a basic qualitative approach informed by Interpretive Phenomenological Analysis (IPA; Smith et al., 2009) as a sensitizing lens and Churchill's (2022) three-step approach to coding as a mechanism. We utilized in-depth, semi-structured interviews to delve into the practices of localizing Open Educational Resources (OER) among facilitators in our selected context, which allowed us to deeply explore the phenomenon while accounting for the effects of researcher preconceptions and bias on results.

DATA COLLECTION TOOLS

Data were collected through in-depth, semi-structured interviews conducted over Zoom. Semi-structured interviews used a few, broad grounding questions but then organically sought to elicit more information from participants via follow-up and clarifying questions. Additionally, localized OER human rights manuals were used as artifacts of content localization to supplement and clarify participant responses.

SAMPLING OR RESEARCH GROUP

Participants were purposefully selected from facilitators engaged in teaching a human rights course using OER content in local community gathering centers across various cities in Ghana, including Kumasi, Accra, and Assin Foso. The sample consisted of 3 male and 3 female facilitators aged 18 and above, all with sufficient experience in utilizing the curriculum. All names were changed to pseudonyms to ensure anonymity in reporting.

RESEARCH PROCEDURES

Multiple semi-structured interviews were conducted with each participant, lasting approximately 45 minutes each, focusing on their adaptations, challenges, and benefits of using OER. Interview transcripts were analyzed following Churchill's (2022) three-step approach, involving deep reading, identification of meaningful sections, and derivation of larger themes where we closely examined each interview and identified meaningful sections ranging from sentences to paragraphs, capturing our participants' experiences. Finally, we derived larger themes from

these sections and made connections across interviews to find common patterns. Ethical approval was obtained from Brigham Young University and the University of Ghana prior to the commencement of the study.

VALIDITY AND RELIABILITY MEASURES

As a qualitative study with phenomenological sensitivities, we focused on ensuring trustworthiness and rigor according to established procedures of qualitative inquiry (Lincoln & Guba, 1985), including prolonged engagement with the context, peer debriefing, memoing, and member checking (Williams & Kimmons, 2022).

FINDINGS

Formal localization is the term the researchers came to use through this study to refer to a type of localization that was purposefully planned and that typically resulted in a remixed artifact, published or not. We differentiate this from informal localization (Bradshaw & McDonald, 2023), which might include a teacher redefining concepts on-the-fly for students or skipping sections of content without prior planning or instantiating their practices into an artifact. Our analysis revealed the following two main themes regarding the challenges of formal localization:

> Challenge #1: Conceptual Newness. Remixing and open licensing may be new concepts, meaning that localizers may not know what they are allowed to do with OER.

> Challenge #2: Burdensome Effort. Not everyone may want to be a localizer, due to burdens associated with research, collaboration, and technology use.

We also identified two main themes or principles regarding the effective practice of localization in our setting:

> Principle #1: Focusing on Method. Effective localizers sought to localize method and delivery rather than subject matter, retaining the core of "what" was being taught while focusing efforts on the "how."

> Principle #2: Leveraging Teacher Knowledge. Teachers' knowledge of their students and pedagogical practice allowed them to be the ones most capable and willing to localize or to serve as a "bridge" between the learner and the content.

We will now explain each of these challenges and principles in more detail.

CHALLENGE #1: CONCEPTUAL NEWNESS

The participants in this study encountered OER as facilitators whose sense of copyright limitations, as well as their accustomed practice of receiving content, did not prepare them to look at the manual with an expectation of revising it. As Rose explained:

> I didn't know there could be changes because some of these materials are subjected to copyright and all. So, if we had to add them, we need some of this copyright release or something from the person before you can add them.

Although the manual had a Creative Commons license, the facilitators were not aware of it. Rose assumed it was not "open" due to her lack of exposure to OER. Similarly, Kara, valuing content sharing, believed in copyright protection to prevent exploitation. This seemingly contradictory perspective stems from Kara's background as a fiction writer, relying on copyright for economic security. Thus, while she was enthusiastic about editing the OER manual, she instinctively wanted to secure copyright protections for her revised manual.

This inconsistency was likely both conscious and subconscious, emanating from conscious considerations of copyright and subconscious expectations of what one simply does with a manual. For instance, James explained:

> I didn't think that [the manual] could be localized. So my brain was not configured in a way to evaluate that. Do you get it? I didn't think about that. Sometimes we go through things, and we just follow the structure or whatever has been given us.

Because teachers traditionally have not had the capability to edit their materials, it was not even considered a possibility. That is, one reads a manual or textbook and does not edit it.

CHALLENGE #2: BURDENSOME EFFORT

Some participants were hesitant to shift from being facilitators to becoming remixers, even after realizing that remixing was an option. Initially, none of the participants made a formal revision of the manual, despite its cultural awkwardness or non-Ghanaian-ness. Kara eventually took the lead in creating a localized manual, but she found the process time-consuming compared to simply teaching the class. James also attempted to remix but decided it was too much work when there was already a manual available that he could adapt informally:

> Why would I want to spend so much time and go through so much trouble rather than just using the options that have been provided? Customizing all the stories or whatever to suit the people I'm having the discussion with? It makes more sense to have a prepared structure than not.

James believed that doing a formal remix would be demanding and burdensome, and it made more sense to use the provided options and customize them as needed. Similarly, Bella independently transformed the manual into student-centered slides, prioritizing her students' needs over creating a shareable resource. As we interviewed participants and asked about localizing a manual hypothetically, they expressed a sense of heaviness and perceived the process as extensive, burdensome, logistically difficult, and technologically challenging. Ralph questioned how to proceed and expressed uncertainty about creating a localized manual.

The burden of formal localization was magnified by the complex logistical task of analyzing learners beyond a single classroom. Participants recognized the need to travel to different regions, engage with communities, and observe learners to tailor the content based on their interests. Gathering data and receiving feedback were crucial for future edits, but technical difficulties and limited technology access, such as limited bandwidth or computer access, added to the challenges faced by remixers.

Participants also acknowledged that localization work could be problematic if done by an outsider and believed that locals should be responsible for it to avoid miscommunications and misinterpretations. They felt that the burden of formal localization was too much for locals to bear but that outsiders would not be able to handle it responsibly either.

Another burdensome aspect of localization involved ongoing iteration. The perpetual permissions for revising, reusing, and remixing the manual created the potential for future users to localize it further. Facilitators felt overwhelmed by the idea of never-ending editing. Ralph opposed the concept of a unique book per village, while Kara suggested a trial version becoming the standard and emphasized the need to halt modifications after the initial trial to maintain a standard body of knowledge.

PRINCIPLE #1: FOCUSING ON METHOD

Despite these challenges, some participants successfully completed the formal localization of the human rights manual. Their approach focused on keeping the principles and structure of the manual intact while adapting the teaching methods to be culturally effective. They emphasized that the "what" of the content should remain unchanged, while the "how" of teaching could be adjusted. At one point, Rose's students reported that the pictures in the manual did not seem Ghanaian, and she told them they should not worry because "soon, their faces will be coming." At the time of this quote, Rose had begun collaborating on a localized version of the human rights manual. She was assuring her students that local pictures would be included in the new manual. As she progressed further in this process, she recommended, "Maybe we can add stories from our local communities, not just our far-away communities. They want to feel the people in their area inside this course." In this example, the practice of

OER was to change pictures to represent learners' faces while not changing the main point of the lesson.

However, picture swapping posed a challenge in finding suitable images that align with educational goals while representing learners. James criticized using pictures depicting African poverty, advocating for a more meaningful localization approach. He emphasized the significance of vision over reality and proposed contrasting images to convey a broader message. James argued against superficial representations of Africa, highlighting their negative impact on perceived potential and subconscious biases.

Bella revised the manual each week, shifting activities to better suit her students. She created her own PowerPoint slides and included new activities which was formal because it was included in a new artifact. Her take on the "sing a hymn" activity for the lesson on "Freedom of Religion" was different from Rose's version in which she had the group sing multiple common Christian hymns. Bella changed the activity into a karaoke style activity: "I decided that each of the members would write their names, and then we will put it in the bowl. A person will come and choose whoever's name is chosen will be the one to sing." Bella also removed activities from her lesson plan if they were unsuitable for meetings with her group. She formally localized the content into a new artifact, though the artifact was never intended for future publication or distribution.

However, three of the participants took this one step further and designed their new version of the human rights manual to invite localization more explicitly. Kara created activities for both in-person and Zoom classes, allowing facilitators to choose based on their needs. Rose recommended localizing the manual by giving facilitators explicit permission in the lesson instructions to adapt it.

Additionally, several participants mentioned wanting to exchange the OER manual's original stories with local stories, while retaining the core content. However, they had different opinions on which stories were best suited for localization. Some preferred stories about local achievements and resourcefulness, while others emphasized the importance of relatable stories.

While participants engaged in the formal practice of trading pictures, activities, and stories for more suitable ones, they recognized the importance of setting limits on localization. James emphasized the significance of structure and cautioned against what others have called the "Localization Paradox" (Wiley, 2021), where excessive localization could alter the core content. For instance, localizing "Freedom of Expression" to Ghana may conflict with cultural norms of not speaking against elders, and so content would need to be adapted to show how those two values can coexist. Facilitators approached localization individually, with varying levels of adjustment while aiming to remain faithful to the original manual.

PRINCIPLE #2: LEVERAGING TEACHER KNOWLEDGE

In terms of who should localize OER developed outside of Ghana, participants believed facilitators were well-suited as cultural intermediaries. However, opinions varied on the facilitator's role as collaborators or creators. Ralph emphasized the need for designers to immerse themselves in the local culture.

> [Go] to where you need to teach and know the people you are going to teach. Know their surroundings, whatever they are surrounded with, why, and relate the content to what they have will make an impact that will be meaningful to them.

However, as the interview progressed, Ralph recognized that efforts to immerse oneself in the local culture may not be fully effective as perspectives differ, and an outsider would need a cultural collaborator:

> I think the designer and the teacher can cooperate. If they don't work together, if I am the teacher and there is something I want to cover, probably I don't know how to put things in place. Probably the teacher should be the bridge between the designer and who is to be taught.

Tony also commented on this difficulty as follows:

> The source [of localization] will be best from the facilitators because they go to the field [to teach human rights in different regions]. They do evaluations. They travel around . . . For you, an author, you try to improve the lessons, I see it as a difficult task to do. I know the people.

James highlighted the relationship between the designer and teacher, envisioning a collaborative process where the designer creates OER and the teacher subsequently localizes it, with both relying on each other.

On the other end of the spectrum, Bella did not consider herself, as a facilitator, to be in a collaborative relationship with the designer but rather serving more as a unidirectional translator. She said, "I study the manual, make a PowerPoint, and then I come to present the class. That is what I do." She interpreted the role of facilitator to include the responsibility of building the cultural bridge for bringing her students to the content rather than the reverse.

SUMMARY

To summarize the challenges and principles associated with formal localization, most participants did not approach OER in unique ways or attempt to use its 5R permissions, likely in part because the concept was new. As they became familiar with the idea of localizing the manual for their regions, either hypothetically or realistically, participants noted a requisite shift in mindset from facilitator to remixer, which was not a natural or desirable shift for all participants. They perceived this formal localization as a heavy process, involving time, research, and tech skills. Given the importance of the topic of human rights, they tried to stick to the core principles and retain the "what" while thoughtfully planning appropriate methods to get those principles across. In fact, most participants recognized facilitators' value in local contexts as cultural intermediaries, despite not considering themselves remixers. They suggested facilitators as collaborative partners or re-designers in independent scenarios.

DISCUSSION

The purpose of this study was to understand the practice of formal localization by teachers in Ghana. Findings revealed the complexities teachers experienced as they encountered decontextualized content, including feelings of ill fit and cultural conflict between global and local ideas. They also revealed two main categories of localization practice: (a) informal localization, which includes in-the-moment, dynamic practices based on social relationships and practical choices; and (b) formal localization, which includes a role shift from teacher to remixer, the heaviness of the task of localizing content, and individual practices employed to adjust content and retain the core ideas while making content relevant to learners in Ghana.

ASSUMPTIONS ABOUT OER WORK

Pre-existing literature noting the potential of OER to allow for localization makes certain assumptions about how people all over the world will be able to retain, revise, remix, reuse, and redistribute OER. Results from this study both support and challenge these assumptions.

First, studies on OER often cite statements like this from the William and Flora Hewlett Packard Foundation (2013): "By enabling virtually anyone to tap into, translate, and tailor educational materials previously reserved only for students at elite universities, OER has the potential to jump start careers and economic development in communities that lag behind" (p. 4). However, in this study, none of the participants were familiar with OER, which means that they were limited by their understandings of traditional copyright, which kept them from approaching the OER manual as something they could formally revise or recreate for their learners. Even after being introduced to OER's unique affordances, participants in this study wanted to apply a traditional copyright to the localized manual, in one case articulating the importance of copyright to protect economic vulnerabilities. Just because OER is available does not mean that users will identify it as such and use its 5R permissions.

Second, in a large study of faculty members using OER in higher education, de los Arcos and Weller (2018) witnessed the following:

> While [educator] ability to engage in the adaptation of the resources is hardly affected [by connectivity issues], any intention educators might have of sharing these materials beyond the confines of a walled space and onto public ether is rendered futile without the means to do so (p. 6).

The researchers found a similar reality. Technological limitations hindered the creation of a new OER human rights manual. The original manual, available as a non-editable PDF file, could only be shared through WhatsApp. It was not until teachers were invited to participate in a localization project and the manual was converted to an editable online format on EdTech Books that editing became possible. However, challenges such as intermittent internet, computer issues, battery problems, and limited experience with technology for publishing caused delays in the project.

Third, because localization rhetoric is optimistic and localization in practice may be burdensome, localization recommendations often fail to consider the practical challenges faced by teachers in Ghana and similar contexts. While some teachers in the study identified instances where the content did not resonate with their learners' needs, language, education levels, or culture, not all were willing to make formal changes to the OER human rights manual. The extensive time and effort required, coupled with the daunting scope of the localization project, deterred most teachers. Many lack the necessary time and resources for comprehensive localization. Additionally, most participants preferred remaining teachers instead of becoming remixers. Cox and Trotter (2017) note that such choices may be influenced by larger social, political, and economic systems they operate within.

UNESCO also recommended efforts to support and collaborate on localization of OER as an intermediary step, which may be more realistic, though vaguely defined. In this study, it should be noted that those who participated in the effort to create a localized manual reported feeling empowered by the experience, which is consistent with Arinto et al. (2017), who connected a higher level of participation with OER with social "empowerment" (p. 587). Additionally, this study showed on a smaller scale the empowering significance of locus of control in decisions about localization, as well as the fact that informal localization of OER (or other content) may occur more feasibly and effectively for a given class, even if the resulting experience is not shareable via a formal resource.

IMPLICATIONS FOR OER DESIGNERS

Based on our participants' experiences encountering decontextualized content created by outsider designers, the risk of creating OER content that negatively imposes on learners' cultural traditions or creates a feeling of otherness or misrepresentation is real and serious. At the same time, not sharing curriculum may amount to oppressively withholding knowledge or excluding learners interested in accessing content. King et al. (2018) pointed out that it is not an either/or dilemma, and that seeing OER content as either "obvious 'public good'" or "ill-thought-out imposition" is a limited view that distracts from more important issues of equality. When designers are far-removed from the context of the learner, content may be seen as being "not for us" or "taking away from Africanism." These feelings echo Aramide and Elaturoti's (2021) acknowledgement that learners in Africa have a level of distrust of content from the Western world due to residual colonialism, creating a barrier to OER adoption.

To address this issue, designers should design with, not for, their learners (Freire, 1973). One study of youth knowledge-workers in Nepal suggested that localization must be done by locals (Ivins, 2011). As not all participants in this study had the capacity or willingness to localize content, requiring consideration of appropriate levels of collaboration, collaborative engagement in design can range from shared decision-making and iterative feedback with local learners to explicit invitations for customization within the content. Sensitivity to the varying degrees of collaboration is necessary when designing with prospective learners. For example, when collaboration is not possible, prompts such as, "Insert a story or activity familiar to your learners to illustrate this principle," formally create space for ongoing localization.

These suggestions are in line with Lambert's (2018) definition of OER through a social justice lens: "Open Education is the development of free digitally enabled learning materials and experiences primarily by and for the benefit and empowerment of non-privileged learners who may be under-represented in education systems or marginalized in their global context." Developing OER as a marginalized person can be a form of empowerment. This phenomenon was noted by Wolfenden and Adinolfi (2019) in their localization study in India. Teachers with the task of localizing the state curriculum did not stray far from the original manual, but the process impacted them as teachers in adopting new ways of teaching. This study adds evidence from individual facilitators in Ghana that this kind of informal localization was happening, but more formal localization with the development of a new manual required collaboration.

On that note, designers must acknowledge the inevitability of informal localization. To encourage teachers to engage in formal localization and contribute to the OER community, it is essential to design formats that facilitate such adaptations. Regardless of the design process, this study highlights that teachers will naturally localize content based on social relationships and the dynamic nature of teaching and learning, offering reassurance to designers. Amiel (2013) noted the same phenomenon in a study of OER localization: that as OER content leaves the hands of the designer, it is inevitably localized informally by the sheer act of being used in a new context. At the same time, the formal localization may be limited by format of the OER or access to design tools. Designers who design content for global audiences need to take this into account and avoid the false assumption that teachers and learners must implement content as is. Instead, they should design with inevitable localization in mind and include tools and source formatting necessary for localization (Hilton et al., 2010).

The desire to tightly script or control content so that any teacher anywhere could pick it up and teach with any level of training (without localizing it) is counter-productive, given the evidence that teachers will exchange content and rearrange it to fit their context. Also, designers need to anticipate this informal localization as a key to learner understanding. Wiley (2021) termed this "the Localization Paradox," in which OER designers may be frustrated if OER adopters localize effective design elements out of the curriculum without realizing it. His solution to this is that "we should always design the most educationally effective resource we can. If its instructional design features are removed or rendered ineffective during localization, the result will be an informational resource fit for use [in] the new context" (para. 13).

Furthermore, one strategy supported by this study is the use of discussion elements in a course. Participants found that even when following the original manual, the discussion format allowed them to incorporate personal experiences and add their own touch, which they considered localization. Through discussion, local participants were able to infuse their own perspectives and relevance, even if learners did not directly relate to the content. The highlights of the course, including understanding, tolerance, and empowerment, emerged through these discussions. Contrary to initial caution from U.S. designers about African education's lecture-based model and students' expected reluctance to engage in discussion, this study demonstrates the value of the discussion format in rendering even less relevant content applicable through personal applications. This study refuted that assumption and supported the practice recommendations of Arinto et al. (2017) to promote teachers' professional development and "participatory pedagogy" such as discussion as a means of informal localization (and empowerment) through OER (p. 589).

Finally, there are complexities in formal localization in terms of language use. Literature indicates that most OER are created in English and then formally translated for those outside of North America (Amiel, 2013, de los Arcos & Weller, 2018). The UNESCO Second World OER Congress in Ljubljana (2017) affirmed the need for the development of local language OER.

However, this study indicates language complexities. For example, formal translation into Twi, the most common native dialect, would be inappropriate because while people speak Twi, they read and write the official language of Ghana, which is English. In this context, informal translation by the teacher was more appropriate for learners. This provides further evidence that localization decisions (including translations) should be made by locals because an international policy mandating translation into local dialects may not meet the needs of the people.

CONCLUSION AND SUGGESTIONS

While this study shows the reality of the inequities that exist for facilitators in Ghana and the many factors that impact localization practices, it also shows participants' propensity to push through the inequities insofar as it served their purposes to do so. Not everyone wanted to formally edit a manual, but all of them found ways to deal with troublesome technology issues, complex cultural tensions, immediate language needs of students in their classes, and recontextualization.

Knowing what decisions they made and how they formally adjusted content to better fit learners will inform researchers and designers alike about where they are in terms of knowledge of OER and their developing practice of localization. We echo other researchers to encourage us to look beyond the theoretical potentials of OER to explore the practice of localization, including why and where this is not happening in order to understand futures with OER that are socially inclusive, collaborative, and more equitable.

DATA ACCESSIBILITY STATEMENT

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

ETHICS AND CONSENT

This work was approved by the IRB of Brigham Young University **IRB2021-167** and adhered to all legal and ethical requirements for human subjects research.

COMPETING INTERESTS

The authors have no competing interests to declare.

AUTHOR CONTRIBUTIONS

Emily Bradshaw: Conceptualization, methodology, data analysis, writing, editing; Royce Kimmons: Conceptualization, methodology, data analysis, writing, editing; Fanny Eliza Bondah: Writing, editing, project management. All authors have read and agreed to the published version of the manuscript.

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