Discussing a Concept for an Online Learning Platform with Rural Sixth-Grade Students in Mind: Evidence-Based Guidelines for Designers, Teachers, and Policy Change

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Abstract. This study is a branch of a larger research project on the design process of FUNREAD, an online learning platform, co-designed with English language teachers (ELTs), that promotes linguistic and sociocultural learning among sixth-grade English language learners (ELLs) from rural communities in Costa Rica. This paper sheds light on the necessity of human-centered design (HCD) when creating teaching materials for online learning platforms. HCD—an approach where "human values are primary and should guide the world that people collectively create (Zachry & Spyridakis, 2016, p. 394)—is central to this study. Through that lens, we analyze participants' insights and suggestions for improving an existing concept in priority areas (e.g., equity, representation, and language learning). Equally, contextualizing teaching materials and available technologies to match the demographic characteristics of school children is indispensable for success. Specifically, rurality plays a major role in how teaching, materials development, and curricular decisions should be made.

Keywords: Social Justice Education, Translanguaging, Rurality, Materials Development

1 Introduction

Through design, people have been able to create innovative products and solutions with real impact for users and society. However, only recently has emphasis on human-centered design (HCD) made designers (1) "develop [an] understanding of and empathy for a diversity of users ... [given] their rich local contextual knowledge" [1, p. 151] and (2) "carefully identify stakeholders and contexts of use, and apply creative processes" to deliver solutions that meet users' needs [2, p. 609]. In turn, these shifts to an HCD approach "help researchers and community members to explore their basic needs together in new ways, create innovative products and solutions to meet these needs, and deliver the subsequent solutions with greater potential for sustainability" [3, p. 57].

Recent studies implementing HCD with primary school children have demonstrated its benefits for helping users develop knowledge of and empathy toward different target groups [1], foster decision-making and accountability when designing solutions for themselves and other users [4], enhance development and implementation of community co-designed solutions (Person et al., 2016), and increased learning engagement [5, 6]. Although user- and context-specific, these studies can serve as implementation models for similar HCD projects in educational settings. Specifically, in our study, we adopt this approach to collectively analyze participants' insights and suggestions for the improvement of an existing concept on an online learning platform that will serve both sixth-grade English language learners (ELLs) and their English language teachers (ELTs) in rural Costa Rica.

2 Literature Review

2.1 Social Justice Education in Rural Communities

Social justice education can be defined as a "conscious and reflexive blend of content and process intended to enhance equity across multiple social identity groups, foster critical perspectives, and promote social action" [7, p. 57]. Interestingly, this concept applied to education in rural, often underserved and marginalized communities can present a considerable challenge compared to education in developed, urban communities [8, 9]. This is especially the case for school curricula and teaching practices that would implement diversity, inclusion, and equity principles beyond established educational policies [10]. Previous studies have established the importance of social justice for academic and social-emotional success for all students [11]. A curriculum that embraces diversity and inclusion, which in turn can increase students' self-esteem and self-worth [12], can accomplish this. Nevertheless, inclusive and equal education for *all* children in rural communities remains a challenge [13, 14].

Studies have raised special interest in rurality and the rural—"less-populated towns outside of large and small city centers to remote areas in the mountains, plains, and deserts across the nation" [15, p. 1]—as a specific lens for social justice in education. Broadly speaking,

rurality encompasses the (non-urban or peri-urban) geographic and racial-ethnic/cultural perspectives of a community [14]. Inevitably, rurality involves a diversity of contexts, where people's lived experiences and existing counter-narratives and testimonials are central to providing an adequate framework for understanding rurality (both generally and in specific settings). However, beyond a definition, Nelson et al. [16] concur on the need to develop a mutual understanding of rurality across multiple geographic locations and interest groups. The authors further suggest that policymakers, researchers, and members of different communities should seek equality among communities, provide access to diverse services, and pursue society's well-being overall. On education specifically, White [17] calls for an understanding of rurality in education to prevent the former from becoming a "blind spot" for policymakers who may unwittingly make peoples in rural communities "invisible" even in the curriculum (p. 53).

This operates in two directions, i.e., the ways that minority, LGBT, or other marginalized groups may not be included (in the school, in the curriculum, in the conversation) all [41, 44], but also the ways that majority rural people and life-ways can be misrepresented (in their rural actuality) by urban perspectives or values [9, 40]. One of the touchiest examples of this involves progressive LGBT advocacy within a (rural) context that still predominantly resists such advocacy. This includes how policymakers will anticipate, probably correctly, that such curricular advocacy may stir up more trouble than they are prepared to face; poverty, race, and class are another touchy advocacy point. How to navigate curricular advocacy for these issues without blanket unhelpfully denigrating a rural majority as "homophobic" or "racist" or "classist" remains a model challenge for diversity, inclusion, and equity efforts generally [11, 42].

Research has indicated that policymakers and other government authorities have given low priority to the needs of rural schools [18, 19]. As such, calls to "widen methodologies and methods to use in rural school choice" may provide rural educational stakeholders both voice and opportunity to thrive in society [14, p. 10]. In that sense, the adoption of a specialized, contextualized, and inclusive curriculum in underserved rural communities that addresses the specific needs of these communities can be a step forward in this process. But such an approach must be taken seriously; meaning that such attempts must as holistically and respectfully address itself to rural ELTs as those ELTs are being asked (or required) to address underserved populations, all the more so given that dominant educational regimens can (accidentally or perhaps deliberately) reproduce unequal, unjust urban-rural social relations [20, 21] Likewise, policymakers involved in creating and implementing this curriculum should consider the diversity of the student population in rural areas to promote equity and inclusion [22, 23]. However, implementing such curricula will require ELTs with professional development or experience in facilitating a curriculum with social justice and context-sensitive focus. This will require professional retention strategies in rural areas to foster educational development with rural community children who currently are at disadvantage in relation to their counterparts [14, 22].

2.2 Rural Education in Developing Countries

Educational research in rural areas, especially in developing countries, suggests closer attention to the challenges imposed on these communities is needed to transform them and make system-wide adjustments that promote rural development [17, 22]. In Latin America, a geographic area still considered underdeveloped, rural communities comprise 20% of the entire continent's population [24]. Their socioeconomic and educational development has been in part restricted by unequal policies and power dominance that, according to Castillo et al. [25], keeps rural areas excluded and subordinated. It is generally agreed that rural communities do not receive the required support responsible for providing strong and effective legislation from governmental institutions to assist them and prevent their steady impoverishment and underdevelopment [17, 25]. As White [17] earnestly states, "Rurality is everybody's business, not [only] for those who live in rural places" (p.50).

Numerous scholars have pointed out that rural communities face context-specific challenges due to their "geographically isolated and economically distressed locations," [14, p. 5], which lead them to a systematic level of poverty and decline. Most of the research on rurality and education describes the disparity between rural and urban education [14]. For instance, in rural Central America, one of the biggest challenges communities face is offering their children (and community members in general) high-quality education with the needed resources for attending rural schools [26]. In other words, a lack of quality education in these communities has impacted the rural student population significantly. The former is reflected in rural community children's low literacy levels and academic underperformance, which lead to fewer further education and job opportunities in comparison to those who attend schools in urban areas [14, 17, 18].

2.3 Translanguaging as Pedagogy and Inclusive Teaching Practice

Current research on bilingual education settings and children's in-classroom language use (e.g., native, heritage, foreign, second language and its multiple combinations) suggests translanguaging as pedagogy "for understanding the process by which teachers navigate the dynamic language practices of their multilingual learners in relation to the kinds of language practices that are desired in school settings" [27, p. 8]. Understanding this process may take an "inclusive teaching" mindset from not only ELTs but also multiple community members and stakeholders, especially with emerging bilinguals in English-only school contexts [28, p. 1]. This applies for rural schools in Costa Rica, where Spanish (the official language) is used in children's everyday life and English (a foreign language) is primarily used in the English classroom.

As an inclusive pedagogy, translanguaging "can activate language learners' entire linguistic repertoire as learning tools and resources as well as engage them in rigorous learning in different academic settings" [28, p. 2]. Still, a privileged status of English versus other spoken

languages in the school curriculum and classroom illustrates how children's linguistic resources "are not equitably distributed in the population, and they are also not equally valued in society and schools" [29, p. 557]. This unequal power relationship among children's spoken languages in school settings—as portrayed in Mora Escalante [30]—is concerning, especially in rural communities where the number of ELLs is steadily growing [31]. This is not to deny the continually expanding dominance of English globally (or the importance of people learning it). Rather, this is to note how inadequately operationalizing bi- or multilingual education where English is not a national language has marginalizing effects on non-English populations and students. Whether this is deliberate or not is a subject for other research; in the present context, simply noting this effect makes visible the policy need to resist it.

Importantly, all curricular materials must resort to some form of audio, visual, or written representation of the people of its subjects [43, 47]. For example, when teaching English vocabulary for the concept "family," who is selected to pedagogically represent those family members? Are they ethnically identical or different? Is there one, two, three or more heads of the family? How many family members are there overall? Are they only immediate (nuclear) relatives or extended ones? Are they of the same or different genders or sex? Is sexuality represented (as an important familial element) or bracketed out? Are they middle- or upper-class or not? The fact that we can expect (even predict) that many such representations will feature one mother, one father, at least one son and one daughter (and possibly a pet)—all of them representative of middle- or upper-class demographics as a "typical family," points as much to the problem of representing concepts (like "family") in teaching materials as the typical hegemonic power dynamics that define "typical family" in those terms in the first place [42, 44].

Plainly enough, the child who comes from a single-parent or poor or same-sex parent household, who is trans or gender non-binary, can discern the implication that their "family" or they are not really a family or family member—or, more proactively, they can re-recognize that culture at large is not inclined to include their authentic self or family in representations in the classroom [9, 47]. This could be less of an issue if classroom practice included non-conventional variations of family verbally in the classroom (this would include further teacher training) [42, 44, 45]. But a species of bad faith appears when teaching materials that integrate these topics are proposed for teaching use. Specifically, *storybooks* not only introduce and integrate social justice issues by modifying conventional teaching example portrayals (e.g., of "families) through a lens of diverse identity groups (e.g., minority ethnic, LGBTQI+, and non-middle-class socioeconomic groups) [42, 44] but also integrate translanguaging for bilingual literacy development as a part of its approach [27, 29]. As such, resistance to social justice issues can take the innocent-seeming form of pragmatic objections to variance of representation in teaching materials. That is, it should not matter if, when illustrating the notion of "family" for English-vocabulary pedagogic purposes, the representations used do not reproduce the hegemonic norms of the surrounding culture. And yet, powerful (and often masked) objections are raised. This itself points to the use

of teaching materials like storybooks as a staging ground for realizing social justice in cultures generally.

3 Methodology

3.1 Design

This study seeks to answer the following research question: Utilizing a human-centered design (HCD) approach, what evidence-based guidelines emerge from English national advisers' insights and suggestions for the improvement of an online learning platform from an existing concept (i.e., digital bilingual storybooks featuring social justice and translanguaging)? In general, design research comprises several phases carried out iteratively where the "scientific findings are also *products* created (or discovered) by a design process" [32, p. 321, italics in original]. Accordingly, this qualitative study follows a process where participant insights and suggestions are analyzed to produce evidence-based guidelines for materials development to be incorporated into the design of an educational intervention.

3.2 Sampling & Data Collection

The study features group interview research [33] with two English national advisers in charge of providing guidance and support to both English regional advisers and ELTs across Costa Rica. Group interviews took the form of ethnographic interviews [34] where both participants and researchers shared ideas and follow-up questions from a starting set of pre-established, open-ended questions. In that sense, participants and researchers can revisit and follow up on each other's questions and ideas discussed throughout a session without a pre-established order. The two participants were purposefully selected for their expert status on the topic [35] and decision-making authority for educational policy and curriculum in Costa Rica's public school system. In HCD, participants' input early in the design process has the greatest impact on a future successful educational intervention [3]; therefore, their contribution in this pre-design phase is of paramount relevance to the overall study.

In mid-Spring 2022, we conducted two online, two-hour group interviews using Zoom to introduce participants to a concept for an online learning platform featuring digital bilingual (English and Spanish) storybooks for grades 1 to 6 students. Storybooks feature social justice issues that portray diverse identity groups and implement translanguaging for bilingual literacy development. Both participants verbally consented to participate in the study. A week prior to the interviews, the researchers shared the presentation materials and group interview questions with participants via a Google Drive link and the Zoom link via email.

3.3 Data Analysis

Data analysis consisted of transcriptions of the audio portion of the Zoom meeting videos. We employed thematic analysis to "describe implicit and explicit ideas within the data ... [to] capture the complexities of meaning within" the interview transcripts [36, pp. 10-11]. Therefore, building from this study's rich, thick, and descriptive data, we analyzed and revisited the group interview transcriptions several times to get credible and reliable codes. Next, both authors coded the group interview transcriptions individually and later conferenced using Zoom to discuss our analysis and check for agreement. Whenever we did not agree, we discussed our reasons and made adjustments to several codes in this process to achieve 100% agreement. Our multiple data sources afforded triangulation as they confirmed or enabled greater consistency among our interpretations [37].

4 Findings

Study findings reveal both strengths and needed improvements of a concept for an online learning platform. Three general themes, featuring participants' insights and suggestions, are discussed in the following paragraphs.

4.1 Social Justice: An Educational Policy and Opportunity in the School Curriculum

In the Costa Rican school curriculum, social justice education is implemented via psycho-social tasks [30]. According to participants, those tasks are found in the curriculum along with guidelines for ELTs to plan their lessons arranged into scenarios. Scenarios provide content, strategies, and task resources to achieve three types of learning: learn to know, learn to do, and learn to be and live in community. The following table adapted from Mora Escalante [30] illustrates a few suggested tasks according to the three types of learning where one participant asserted that social justice education is implicitly embedded within the school curriculum.

Table 1. Task and types of learning

Learn to know	Learn to do	Learn to be and live in community
Grammar & Sentence Frame Simple present tense and personal subject pronouns (SVC) - (Juan Santamaria, Sandra Cauffman,) are national heroes/famous people. - He/she is sacrificial. (brave, courageous)	Functions - Describing people's achievements and personal characteristics. - Describing superheroes. - Describing and comparing heroic actions. - Retelling/relating past events using connectors.	Psycho-social - Expressing respect and pride for local and national culture, outstanding people, family, and friends. - Explaining motivations to improve/change lives. - Expressing respect for diversity of gender roles

- He/she fights crime. (flies, disappears, freezes things, destroys, jumps, etc.)		and senior citizens in our society.

The second participant added that the three types of learning above should enhance education for a new citizenship under the national school curriculum. In the quote below, they explain how social justice education is fostered in that curriculum:

> It brings this idea that is equal participation or constitution, and it's part of the educational policy of this country: bringing equality and social justice into the classroom, for everybody; not only in the classroom but for future citizenship.

Beyond an implicit educational policy, participants affirmed that social justice, and social justice education per se, represent both an opportunity and a commitment to students from early childhood education onward. Specifically, one participant described social justice as "a big umbrella" and "an issue to bring up since early childhood development." For them, a shift in the ways ELTs present and address social (in)justice (if at all) with students is "the only way to fight and create a change of mind ... since kids are young; they are beginning their lives." Their rationale for needed changes to how social justice education has been implemented in curricula is:

> We need to begin that at early ages, and as I said before, we have it in our curriculum in an implicit way. But if we can develop materials that can make that more explicit and connected with what we have there, it would be great.

Social justice education as "a big umbrella" can cover several other concepts deserving closer attention such as inclusion (representation), equity (redistribution), and diversity (recognition). In order to explain their relevance in the school curriculum, participants focused their discussion on how social justice education is implemented and why it matters in the school curriculum.

Inclusion (Representation). One participant, referring to Costa Rica's estimated population of 5.2 million people in 2022, portrayed the country as "a very plural society" with "people from different backgrounds and ethnic groups that need to be recognized." Among those groups, the participant recalled indigenous populations with whom they have worked firsthand with on literary projects. Collaborations with indigenous groups included "storybooks for indigenous people that are written in Spanish [official language] and Bribi [indigenous language], or Spanish and Cabecar [indigenous language] ... but their languages are at real risk of disappearing." They also remarked that these ethnic groups' needs and interests deserve representation in the school

curriculum, therefore, “It’s really something that we could work more on. We could never say, ‘It’s enough’.”

In support of this statement, the second participant lobbied for acknowledging student life experiences during literacy and literature education.

> If there’s not a person, another human being who can expose me to other realities, and to other contexts, how would I know about that? How can I see how other people think? How can I know what other people are going through in the world if it’s not by somebody sharing with me a resource or an experience?

They further elaborated on the role inclusive literature plays in representing indigenous groups and giving them a voice.

> If you go and look for literature, what are those books? What are those stories? So, that’s why I agree with you about this perspective on how these resources portray different realities and let people not only portray different realities but also allow everybody to it. To have a voice when they interact with the resources.

The other participant reminded us that “to be more open-minded to diversity in general terms is a challenge still,” especially to “other kinds of thinking in religion, cultural backgrounds”. For example, they recalled resistance emerging from racism given “differences in terms of ethnic backgrounds” and xenophobia, a form of “[r]ejection against foreigners according to their background” as well. Nevertheless, “Costa Rica is becoming more open in order to portray different scenarios of families,” regardless of the political influence of the Catholic church, usually supported by Costa Rica as a confessional state.

Equity (Redistribution). With the hindrances of COVID-19, gaps in relation to equitable access to resources and educational quality widened, affecting both students and ELTs. For example, one participant recalled rural school students’ need for computing devices to receive class materials and submit their work while stressing flexibility and a paradigm change from ELTs in the next quote.

> They [students] don’t have the technology. ... The thing is that we have to be flexible as you said, and I think that is part of the social justice approach to know which populations can benefit more... I think we have to review our educational paradigms, and we need to bring new things that can help us to offer more opportunities to everyone because I think that’s the idea. To not leave anyone behind.

For the other participant, the above relates equitable access and flexibility to making accommodations to meet students' needs, specifically a policy of fostering accessibility both in the curriculum and didactic materials.

> [On] the topic of accessibility: I think that it's interesting because you're talking about diversity and minorities, and I know that this is a new topic because it happened to [the other participant] and me when we came into the office last year, and I said, "We need to create accessible material."

Finally, one participant commented on equity matters such as access to essential services and challenges specific to making equity issues visible in the curriculum:

> We need to be more aware of the people that don't have a house; that don't have a job; that still cannot even finish primary school, high school, or university, because of poverty. We need to be aware of that and become a more empathetic society that really wants everybody to have the same opportunities. It is also a challenge to approach that, to make those topics age appropriate for children.

Diversity (Recognition). "Multiple groups in Costa Rica require and deserve recognition in the social sphere," one participant recalled. At the same time, because of misrecognition, historical gaps continue to harm underserved groups, especially women. Specifically, misrecognition of women and gender roles have negatively affected women as well as the work needed to prompt change.

> The social gaps are becoming bigger and bigger. So, I think in terms of gender, we have a debt. I think Costa Rica is working, but still, we need to continue creating more opportunities for women. We also need to empower them and develop good relationships and an understanding of gender roles. I think that is important in our country; there is a lot of violence. … The issue of gender equity is an issue in Costa Rica. I think violence against women is something that we have to keep on fighting, and besides that, I think of racism.

The second participant amplified the above: highlighting the (actual or perceived) challenges of recognizing underserved social groups, including diverse families who lack recognition in the school curriculum:

> I read the story "Arturo stays home," and yeah, there was something there that I was like, "Are we ready to talk about this? Are we ready to portray this kind of family openly in a story?"

Recalling the types of learning previously discussed, one participant emphasized that the pedagogic goal to "learn to live and be in the world" required integration not only in curricula but also teaching practice.

> So, because we need to learn to live, we have one pillar in our curriculum which is "learn to live and be in the world." So, I think that in order to learn to live and be, we need to understand the rights of other people and the needs that other people have. We need to create an understanding of the otherness. I think that is very necessary for our society, which is not equal in Costa Rica.

4.2 Translanguaging: A Useful and Flexible Teaching and Learning Strategy

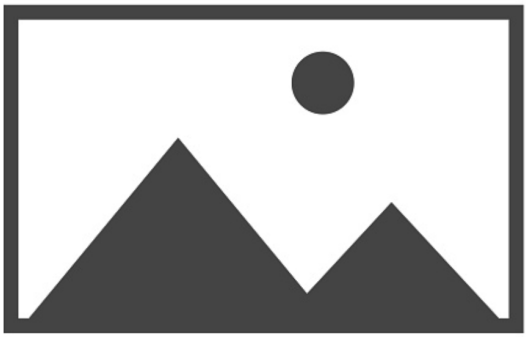
The Costa Rican primary school curriculum adopted a socio-constructivist approach where "[c]onstruction and reconstruction of knowledge is a continuing process, progressive, and never-ending," that learners are "responsible member[s] of a world community," and that ELTs are "social engineers" [30, pp. 19-20]. Within this curriculum, ELTs should be "knowledgeable about updated English language theories and methodologies" (ibid, p. 28), should "[t]each English in English" (ibid, p. 35), and be "aware and sensitive about local and global issues and learners' affective and socio-cultural needs" (ibid, p.28). This background is a preamble to our findings concerning translanguaging and the school curriculum.

Prior to a discussion on translanguaging and the school curriculum, participants reviewed seven digital bilingual storybooks narrated in both English and Spanish (see figure 1). We explained to participants that materials had been created at the onset of COVID-19 lockdown in Costa Rica and highlighted social justice issues (e.g., socioeconomics, sexual identity) involving 1-6 grade school-age children, their families, and communities, and are intended as sample materials for further development.

Fig 1. Illustrative picture of a page in the digital bilingual storybook, *Arturo Stays Home*.

On Monday, I woke up and started eating breakfast.

El lunes me desperté y comencé a desayunar.



During the group interview, participants acknowledged that translanguaging was a new concept to them. One wondered aloud about the rationale behind translanguaging for materials development and teaching: “Why did you decide to use this type of translanguaging? What is the reason? I see both English and Spanish, an immediate translation. What is the rationalization behind that?” To guide the discussion, we provided the following explanation:

> The idea behind translanguaging is giving students the feeling that they can produce language, giving students that empowerment... that English is something they can conquer, that they can communicate. Translanguaging allows students to feel empowered, and in Costa Rica, there is a need to let students use some Spanish during their English classes. One of the reasons why this is important for me is because I remember my own education and how many times I was silenced in English classes because I couldn’t say something. I wish we could move beyond that. As a student, if using a few words in Spanish is not going to get me in trouble, I will be able to move forward. So, translanguaging is also a way to balance language proficiency levels in the classroom while allowing students to speak, to use language. In our context, translanguaging is of utmost importance for inclusion, considering students who are underrepresented, students with challenging backgrounds, and students who have been silenced many times because of their lack of education... because they’re underdeveloped; because they didn’t have the opportunity that mainstream has. Translanguaging is a way to facilitate learning.

Having developed a more comprehensive idea of translanguaging, one participant acknowledged and recalled translanguaging when facilitating Spanish literacy to indigenous people: “I think translanguaging and this type of bilingual approach to English learning can be important because I’ve had experiences working with indigenous people in our country, and we

use that". Nonetheless, she expressed doubts about the benefits translanguaging might provide for English teaching: "I think in our context, where English is taught as a foreign language, and we are moving by proficiency levels, the right worth for [utility of] translanguaging will vary". The circumstances of COVID-19 and the creation of digital bilingual storybooks during the onset of lockdowns in 2020 suggested the helpfulness of translanguaging for students who were learning English remotely:

> [When] students are working on their own, they need it [translanguaging]. So, I would say that in Costa Rica we are still working with different student populations with different needs. I think translanguaging can be a useful strategy for [remote] learners ... because they don't have a teacher next to them. … Even when we were developing resources and guidelines that students were taking home, ... they had to do it on their own, their parents didn't know any English. So, in our case, we support the use of Spanish when it's needed, and we understand how it's used to negotiate meaning among themselves. I think that when we are in a context where several languages are spoken, we would use our native language before the new one, but that's okay.

Ultimately, they supported the use of translanguaging in the classroom when the situation called for it:

> [Students should] use translanguaging for reading when it is needed, with a purpose. I would not recommend this in contexts where we have a teacher that is mediating and facilitating materials that are age-appropriate, at their level, and are promoting reading for understanding without translation.

For the second participant, translanguaging is "... something that happens in the classroom whether we like it or not."

> If you ask your students, mostly in primary school, to work in pairs reading books or something, they will immediately go back to Spanish because they don't have the language to actually carry out all the things that they have to do in English, they are just beginners. So, they need to go back to Spanish, then they come back to English. That's something natural that happens in the classroom.

It is critical to emphasize here that this is not an example of merely "switching" languages; translanguaging maintains that all people (monolingual to multilingual alike) practice a unified repertoire of speaking strategies that draw upon their linguistic experience overall. Conceptually, translanguaging accounts for all use of languages, not just multi- or bi-lingual contexts. Nonetheless, the second participant also expressed concerns about translanguaging in the classroom—specifically, the overuse of Spanish (rather than English) in classroom

interactions between students and teachers and students alike, as an obstacle to children's English language development.

> I just have concerns in terms of how to use Spanish because, in my experience as a teacher, when you offer kids both English and Spanish, even if you're translating at the moment you're speaking, they will prefer using their native language, and they will totally avoid the second language, which in a certain way affects their acquisition of the second language. [This could hamper English acquisition, because students] will think, "Translation is coming, so why would I make any effort?" It even happens to some of us when we are reading subtitles on T.V. Most of the time, we will focus on reading, even if we totally understand what we are listening to. So, that is one of my concerns.

Nevertheless, they acknowledged the historic moment and reasons why the bilingual storybooks were created and agreed that students needed additional support during lockdowns:

> If translanguaging is going to add to that purpose, it will be welcomed. If you're thinking about students working with the materials by themselves, you should have exercises that can give you immediate feedback because you're working on your own. Even if you're working at home with your parents, your parents may not speak English, so you need that material to give you some feedback immediately.

They also referred back to the rationale for translanguaging by acknowledging the negative effects of banning classroom use of Spanish during the process of learning English. He stated, "We don't want to get to what [you] said before, which is shutting the kids off because they're not used to the second language. They cannot speak if they aren't used to the second language. So, it's about flexibility." It must be emphasized here that the research on translanguaging does not reflect a two-language (e.g., Spanish *and* English) situation but a unitary practice (neither quite Spanish or English ultimately) that draws upon the linguistic resources of both language. Classically, the use of Spanish in the English classroom could be construed as scaffolding (using one's native linguistic knowledge to understand a new language) not resistance. [On this point, we should not lose sight of the fact that the English classroom is a site where passing the class may be of higher priority to students compared to mastering English.] In contrast, translanguaging points to the developing repertoire of linguistic practices (including new vocabulary, grammar, and syntax within a context of passing the class).

The issue of translanguaging in the classroom also pivoted into teaching practice:

> In fact, it also raises some questions. For example, if the expectation is that the kids can use certain expressions of a certain language in the classroom, and they aren't doing it, what is it that I'm not doing as a teacher that they are not using the

> target language [English]? So, instead of saying, "Don't use Spanish," ask yourself, "What do they need to communicate, to understand, that they go back to Spanish?" And that is also part of my self-assessment as a teacher.

While this explicitly highlights the unitary repertoire of translanguaging, participants agreed that professional development and a mutual consensus among educational authorities would be necessary for translanguaging to be implemented.

> I think we need to know more, and it would be nice if we could make a first introduction to the decision makers in terms of curriculum development in the country so that we understand exactly what it means to teach using translanguaging [rather than saying] we are going to give that to the teachers without understanding what is embedded in all that.

4.3 Materials' Role in the English Classroom

One participant stated that materials need the representation of the *entire* population, ultimately including also the nonhuman worlds, since biodiversity and preservation of natural resources are fundamental to Costa Rica's socioeconomic development:

> I like this idea of diversity. I would like to see indigenous people from our country represented there as well as where the stories are set. It would be also nice to include things that are more connected to our biodiversity. Something that is a high point, connected also with this, is including sustainable development and the importance of reflecting on the pandemic.

This pivoted to a need to provide a format for materials development for ELTs. Specifically, ELTs "should have a template or model to follow" not only for materials development but also for pedagogical mediation; in that way, teachers can follow suggested guidelines to use materials appropriately; accordingly, a "recommendation is to provide the teacher a format. I don't know if perhaps you're going to negotiate with the teacher what is going to be the structure, the design."

When creating materials to teach English, "It is essential to take into consideration everyone's needs and contexts in favor of an inclusive and respectful education." In other words, ELTs should be cognizant that materials introduce content in a sensitive and respectful way. That way students might expand their viewpoints and worldviews through these materials.

> This way they can ask: what other possibilities do you see? What is your context? I think we need to do this in a subtle and respectful way so that everybody who sees the material doesn't feel threatened or disrespected but can see it as an open way to see the world. … We have to review our educational paradigms, and we

> need to bring new things that can help us offer more opportunities to everyone because that's the idea: to not leave anyone behind".

The second participant also stressed a need to align materials to the school curriculum's goals: "In terms of lesson plans, again, they don't have the structural components of our curriculum. I also think that when students are working on reading comprehension, the task should be related to reading comprehension." They added that materials should be not only respectful and thoughtful of students' needs and worldviews but also in line with the implicit expectations in the curriculum.

4.4 Materials Responding to Students' Needs and Demographics

One participant stressed the need to cater resources to students' needs first.

> In terms of a social justice approach to teaching resources, it's very important to consider the inclusiveness of the resource itself. I saw that a lot of visuals are used. The type of font is large, so you can really see it comfortably, and you can read it. What about the audio? Did you record audio for those readings? Is there no audio? And, finally, have these resources been used by kids already? How can we make some adjustments to make them pertinent to the new context that we are living in right now, and also connecting them more to the curriculum?

The second participant added the importance of providing features for students with different learning difficulties (as part of a more inclusive curriculum):

> What I'm saying is that the pictures that you have in the stories… They need what is called "alternative text." And, also, you have to be sure that blind people can actually read those stories because you don't know if there are going to be blind people trying to access the materials.

4.5 Cognitive and Emotional Engagement

One participant noted the need to align materials with cross-curricular themes in Costa Rica's educational policies: namely, ELTs' pedagogical mediation such that children can become respectful, reflective, inclusive, and problem-solvers.

> We have four cross-curricular main themes; one is sustainable development, another is technology use, the next one is collaboration with people and team working, and the last one is cognitive skills development (critical thinking, creativity, innovation, all that). I think there is a lot of potential in the presented resources for all that.

They added that being part of a society where people embrace digital technologies, collaborate with others, and become critical thinkers is one of main goals of the Ministry of Education in Costa Rica; ELTs can therefore incorporate cross-curricular themes while creating materials to promote relevant critical skills:

> I think that would be the biggest challenge: making them engaging, attractive, meaningful, authentic, and interactive. They may include gamification where children can play and learn at the same time; where children can develop their critical thinking skills, their communication skills, and their collaborative skills. That they take them beyond the classroom setting, and they can share this learning with their communities, with society, and even with the world if they have the technology. I think those are the challenges when you are designing resources. … [Maybe some] a type of digital book where you flip pages interactively, perhaps hypertexts where words are highlighted and explained, and they can be played in English and Spanish. Perhaps words that are important for communication, meaning, and understanding of a text.

4.6 Need for Professional Development for Different Regions

The participants agreed that professional development is central to ELTs' best teaching practices. Specifically, this means preparing ELTs to teach and develop materials and be active participants in the teaching and learning process:

> I think that this type of initiative demands teachers' professional development. We need to make teachers participate. As you suggested in our first meeting, you said, "teachers will be the writers. Teachers will be developers." I think that's great because, as I said at that time, it creates ownership.

Aware of multiple disparities and challenges in education between rural and urban regions, one participant mentioned the necessity to provide contextualized professional development to ELTs across different contexts. They expressed, for example, that every region of Costa Rica has differences and access to certain types of information might be limited in places, especially rural ones.

> There can be communication between different populations who live in two different settings and have different struggles. Or even within San Jose [an urban city in Costa Rica], we have places that have a lot of difficulties in terms of all that you have been describing. And people who live in other geographic areas where those struggles don't exist.

The second participant drew attention to the importance of having conversations with ELTs about materials development and how these materials need to be aligned with curricular goals

> I wouldn't say training, but it would be nice to have a conversation with teachers about this to create awareness from this perspective. This is a major issue if we are going to use these resources. How are these resources aligned with the elements of our curriculum?

5 Discussion

Following an HCD approach [38, 39], below we offer the evidence-based guidelines based on themes in the group interview data as practical ideas and recommendations for instructional designers and ELTs when developing teaching materials for students in rural and similar contexts.

5.1 Implementing social justice in teaching

Teaching materials should explicitly introduce and address social justice matters. This guideline is supported by previous research addressing existing disparities between rural and urban students that exacerbate educational and social gaps [14, 40] and efforts to promote social justice education to counteract those gaps [10, 17, 18, 41]. Following this guideline, designers and ELTs can develop materials that make social (in)justices visible and invite children to holistically discuss and reflect on the issues presented and their own experiences. To do this, they will (1) choose a scenario or unit, (2) identify content, guidelines, and examples of social justice-related tasks, (3) consider their own examples, (4) categorize examples according to specific concepts (e.g., equity, diversity, inclusion), (5) evaluate examples according to their relatedness with children and their immediate context, (6) ask at least one peer expert to review all the former for feedback, (7) make revisions, and (8) execute the idea or concept for materials development.

Teaching materials should represent people with different backgrounds. This guideline is supported by previous research on centering people's lived experiences and narratives within rurality—not only providing reflections of rural community members involved in this process [16] but also confronting the social and psychological influences of discrimination and stereotypes [9]. Following this guideline, designers and teachers can develop materials that portray both individuals' and groups' voices, stories, and experiences faithfully. To do this, they will (1) choose a scenario or unit, (2) identify examples of individuals and groups in the content, (3) consider the addition of unaccounted individuals and groups, (4) arrange individuals and groups according to cultural values, identity, and any other relevant aspect of their background, (5) rearrange individuals and groups according to their mutual interests and relationships, (6) ask

at least one peer expert to review all the former for feedback, (7) make revisions, and (8) execute the idea or concept for materials development.

Teaching materials should acknowledge equity and disparity. This guideline is supported by previous research confronting inequalities and stratification in schools [14] and developing perceptions and feelings about children's identities and those of others [42]. Following this guideline, designers and ELTs can develop materials that recognize equity as a right. To do this, they will (1) choose a scenario or unit, (2) identity examples of individuals and groups in the content who either experience disparities or not, (3) consider the addition of unaccounted individuals and groups, (4) arrange individuals and groups according to unequal conditions or treatment, (5) rearrange individuals and groups according to their mutual interests and relationships, 6) ask at least one peer expert to review all the former for feedback, (7) make revisions, and (8) execute the idea or concept for materials development.

Teaching materials should showcase diverse people, their roles, and their contributions. This guideline is supported by previous research interrogating and challenging media representations of race, class, gender, and multiple identity markers that privilege dominant groups [43] and exploring teaching practices that address race-related stereotypes in children [42, 44, 45]. Following this guideline, designers and ELTs can develop materials that highlight the value and work of specific individuals and groups frequently discriminated against due to power and privilege. To do this, they will (1) choose a scenario or unit, (2) identify examples of underprivileged or discriminated-against individuals and groups in the content whose contributions make a difference in society, (3) consider the addition of unaccounted individuals and groups, (4) arrange individuals and groups according to their background and contributions, (5) ask at least one peer expert to review all the former for feedback, (6) make revisions, and (7) execute the idea or concept for materials development.

5.2 Implementing technology and language (as a technology) in teaching

Teaching materials should implement bilingual approaches to learning. This guideline is supported by previous research on emerging bilinguals, inclusive education, and students' needs in the language classroom [27, 28, 29]. Following this guideline, designers and ELTs can develop materials that align with existing philosophical principles and teaching methodologies according to curricular requirements. To do this, they will (1) identify philosophical principles and teaching methodologies in the curriculum, (2) consider emerging methodologies and principles for bilingual education unaccounted in the curriculum, (3) evaluate the alignment of curricular specifications, requirements, examples, and instructions with the former, (4) make a plan for implementing specific principles and strategies, (5) ask at least one peer expert to review all the former for feedback, (6) make revisions, and (7) execute the idea or concept for materials development.

Teaching materials should consider students' technology needs. This guideline is supported by previous research on challenges and opportunities to provide learning opportunities to culturally and linguistically diverse students online [46, 47] and in classroom settings [40, 44]. Following this guideline, designers and ELTs can develop materials that provide flexibility to students' use of technologies in multiple delivery formats. To do this, they will (1) identify students' available technologies for learning, (2) create student profiles to assess readiness and willingness to multiple delivery formats, (3) determine optimal formats to create and deliver materials, (4) make a plan for supporting students in learning available technologies, (5) ask at least one peer expert to review all the former for feedback, (6) make revisions, and (7) execute the idea or concept for materials development.

Teaching materials should consider students' language use needs. This guideline is supported by previous research on the role of materials and their impact on students' language development, positing that materials should lead students to develop their potential [22]. Following this guideline, designers and ELTs can develop materials that provide flexibility to students who know and use multiple languages for learning. To do this, they will (1) identify the multiple languages used formally and informally in the classroom, (2) create student profiles according to languages used for learning, (3) list strategies that promote multiple languages for learning, (4) make a plan for supporting students in collaborating and learning with peers while using multiple languages, (5) ask at least one peer expert to review all the former for feedback, (6) make revisions, and (7) execute the idea or concept for materials development.

5.3 Implementing sustainable teaching and learning

Teaching materials should afford accessibility. This guideline is supported by previous research on egalitarian access to learning opportunities and accessible materials development [22, 46] as well as social inclusion to support the social-emotional and academic success of diverse students [11]. Following this guideline, designers and ELTs can develop materials that offer tools and features for impaired students' learning. To do this, they will (1) identify students' available technologies for learning, (2) create student profiles according to their accessibility needs, (3) identify suitable tools and features in students' available technologies, (4) confirm with the student, student parents, and other teachers the helpfulness of the identified tools and features for learning, (5) create or adapt suggested tasks and examples implementing the tools and features, (6) ask at least one peer expert to review all the former for feedback, (7) make revisions, and (8) execute the idea or concept for materials development.

Teaching materials should foster autonomous learning. This guideline is supported by previous research on how the role of materials should be engaging and allow students to build their skill sets in the classrooms [48]. Following this guideline, designers and ELTs can develop materials that provide scaffolds, guidance, and immediate feedback for self-study and student independence in learning. To do this, they will (1) choose a scenario or unit, (2) create or adapt

suggested tasks and examples, (3) arrange tasks and examples sequentially, according to their complexity or mastery requirements, (4) create instructions that guide students and provide suggestions as they move from one step or activity to another, (5) create immediate feedback that provides students direction and understanding of the content once or in the process of completing tasks, (6) ask at least one peer expert to review all the former for feedback, (7) make revisions, and (8) execute the idea or concept for materials development.

Teaching materials should align with mandated curricular requirements. This guideline is supported by previous research on tailoring and/or adopting a specialized, contextualized, and inclusive curriculum that supports and enhances students' needs in underserved rural communities [22, 23]. Following this guideline, designers and ELTs can develop materials that meet specific curricular requirements in relation to content, strategies, tasks, and principles. To do this, they will (1) choose a scenario or unit, (2) identify curricular specifications, requirements, examples, and instructions, (3) list ideas for materials that meet the specifications and requirements, (4) ask at least one peer expert to review all the former for feedback, (5) make revisions, and (6) execute the idea or concept for materials development.

Teaching materials should foster agents of change. This guideline is supported by previous research on educational policy change and rural development [16, 17], emphasizing children's skills development to successfully adapt to our changing world [14]. Following this guideline, designers and ELTs can develop materials that provide critical thinking, creativity, collaboration, and problem-solving skills development. To do this, they will (1) choose a scenario or unit, (2) identify skill sets needed to complete a task, (3) create a plan to foster skills development via learning tasks with examples, (4) ask at least one peer expert to review all the former for feedback, (5) make revisions, and (6) execute the idea or concept for materials development.

Teaching materials should foster engagement and interactivity. This guideline is supported by previous research on playful learning environments and gamification for language learning [49, 50, 51, 52, 53]. Following this guideline, designers and ELTs can develop materials that implement gamified and interactive features. To do this, they will (1) choose a scenario or unit, (2) create or adapt suggested tasks and examples, (3) identify students' available technologies for learning, (4) list gameful strategies and interactive features available, (4) determine optimal formats to create and deliver materials with gamified and interactive features, (5) ask at least one peer expert to review all the former for feedback, (6) make revisions, and (7) execute the idea or concept for materials development.

Teaching materials should promote professional development. This guideline is supported by previous research on fostering and helping teachers create thoughtful and inclusive materials, representative of students' context and cultural values [22]. Following this guideline, designers and ELTs can develop materials that feature teacher's guides and model materials development. To do this, they will (1) choose a scenario or unit, (2) create or adapt suggested tasks and

examples, (3) create a teacher section with detailed descriptions of concepts, principles, strategies, tips, and examples that supports teachers' theoretical understanding for successful implementation and the development of their own materials, (4) ask at least one peer expert to review all the former for feedback, (5) make revisions, and (6) execute the idea or concept for materials development.

6 Implications

We put forward the need to seek educational policy change on teaching and curricular decisions for the development and implementation of teaching materials with social justice education, translanguaging, and rurality at their core. Likewise, further research in collaboration with ELTs and community members is desirable to supplement current efforts via educational research and development projects with rural students in mind.

6.1 Foster social justice education principles explicitly in the curriculum

It is of great importance to visualize a curriculum that takes into consideration a variety of contexts, especially in rural areas, where the idea of a one-size fits all approach becomes ineffective and detrimental for schools in rural communities [54]. In this sense, since the curriculum is the mechanism that educational authorities use to lead societies to socio-political and economic development, it should be equitable. The curriculum should truly reflect the ethnic, racial, and cultural diversity of different communities where community members' voices are reflected and respected in educational practices [55]. A deep restructuring of the school curriculum should be considered in light of an inclusive social justice approach.

6.2 Encourage practices that promote equity, diversity, inclusion, and rurality both in the curriculum and in children's everyday lives with community members via community engagement activities

Ill-informed educational practices reflected in educational policies for rural communities are detrimental to their development [54]. In this sense, existing policies fail to provide adequate support for the educational development of these communities. Unfortunately, some of these policies are created based on "ignorance and lack of care for rural places" [54, p. 226]. Therefore, it is necessary that policymakers identify schools in need of support and provide assistance accordingly. That process should involve collaborative research efforts, including ELTs and community members, to better understand and provide solutions to community and school needs. Additionally, offering public and inclusive spaces for learning and critical discussions with community members, including ELTs and ELLs, is of utmost importance for fostering broader perspectives. The former can be done through community engagement activities, including volunteerism, TEDTalks, and community leadership programs.

6.3 Implement bilingual education approaches such as translanguaging that respond to students' needs.

Despite difficulties resulting from rural schools' low budgets and resource shortages experienced in the classroom, translanguaging is positioned as a valuable tool to promote inclusive learning in communities with diverse students [56]. Translanguaging in rural classrooms is envisioned as a beneficial approach to assist ELLs in learning English. Translanguaging as pedagogy will allow ELLs in rural communities to leverage their linguistic knowledge and develop literacy skills to both negotiate meaning and communicate in the target language [27, 28]. Most importantly, translanguaging is an option to support emergent bilinguals, and especially children in rural communities when developing language skills in English, mediated by their overall linguistic resources [28].

6.4 Provide professional development to pre-and in-service ELTs on effective approaches to bilingual education

ELTs in rural areas often come from the same communities where they teach and are not highly qualified to teach specialized subjects such as foreign languages. This results in a challenge to help rural ELLs master a second language [54]. Highly-qualified teachers who also work in rural areas, unfortunately, tend to leave rural communities for better opportunities outside those areas [17, 54]. Additionally, one of the big challenges in rural areas is to provide professional development to teachers [54], which is imperative for pre- and in-service ELTs. To achieve such professionalization, educational authorities would devote the necessary funds and resources to prepare rural ELTs with innovative practices which, in turn, can help ELLs learn English effectively [54]. Since translanguaging has been identified as a pedagogy with the potential to assist rural school children in using Spanish to negotiate meaning while learning English [29], rural ELTs can benefit from these practices to help their students succeed. In this sense, ELLs should be allowed to leverage translanguaging as a means for negotiating meaning and communicating their ideas using their multiple languages without the need for a threatening or frustrating English-only learning environment [28].

6.5 Provide spaces for ELTs to collaboratively develop materials that follow evidence-based guidelines and HCD principles

Teaching materials play a central role in the school curriculum and the classroom as essential sources of knowledge and learning expected to be transmitted to society. Additionally, these materials become the tools teachers have to inspire learning, creativity, and critical thinking. However, in rural areas, teaching materials are mostly dated, rarely reflect today's world demands, and seldom align with educational policies and goals [22]. Under that scenario, teachers in rural schools play a crucial role in materials development that facilitate content in meaningful ways. Therefore, professional development before and during the school year should become a requisite for ELTs to teach and demand educational authorities to sponsor.

7 Conclusion

This investigation sheds light on the benefits from following a human-centered design (HCD) approach to creating teaching materials for an online learning platform. Social justice education emerged as a "big umbrella" informing teaching materials development and practices in the classroom, especially when introducing and addressing social issues affecting children and their communities. Although implicitly embedded in the school curriculum, social justice education can help make social (in)justice visible and invite children to holistically discuss and reflect on the issues presented in light of their own experiences.

Translanguaging is well-positioned as a useful and flexible pedagogy currently unofficially used in the classroom to support ELLs' English learning while negotiating meaning through their multiple linguistic repertoires, including Spanish. Rurality represented an opportunity to unveil unequal educational policies impacting rural communities. It also helped inform how teaching, materials development, and curricular decisions can be made in collaboration with ELTs and community members toward social justice goals.

Lastly, the evidence-based guidelines and recommendations, derived from an HCD approach, provide instructional designers and ELTs with practical ideas when developing teaching materials for students in rural and similar contexts. The study advances a requirement for educational policy change around teaching and curricular decisions for developing and implementing social justice education teaching materials as well as further research opportunities in collaboration with ELTs and community members to supplement current efforts using educational research and development projects that keep the needs of rural students in mind.

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