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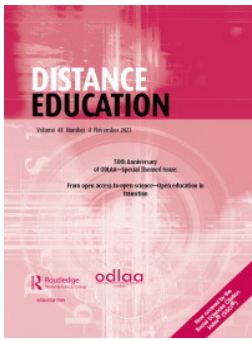
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# Equity, diversity, and inclusion in open education: A systematic literature review

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## ABSTRACT

Equity, diversity, and inclusion (EDI) and open education are key areas in the current development of educational systems internationally. However, little is known about the general perspective of what has been addressed about EDI in open educational contexts to date. To address this gap, this paper presents a systematic literature review of 15 papers where we examined the current state of the art and the main suggestions for EDI implementation. Results indicate that practitioners should involve all stakeholders, including institutions, faculty members, and students, in EDI development to enhance open educational practices as well as in the cocreation of open educational resources which need to consider culture, language, and location, among others. This review of literature contributes an evidence base to support the future development and adoption of EDI in open educational contexts by organizing relevant literature into coherent themes that can inform future research.

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equity; diversity; inclusion;  
open education; EDI in  
open education; EDI  
literature review

## Introduction and background

The desire to provide comprehensive and sustainable educational opportunities for a diverse student population is a key goal of many educational systems and policy-makers around the globe and it has been for some time (Medina-García et al., 2020). The fact that we are still debating and researching about equity, diversity, and inclusion (EDI) in education (Campbell, 2021) means that this is not an easy goal to achieve, and that there are many challenges to be overcome.

Even though EDI represent different concepts, they often overlap and in many respects are mutually constitutive. As detailed in Bossu et al. (2019), for example, inclusion as a phenomenon and practice may come into being only when issues of diversity are discussed, and when there is evidence of exclusion which may point to inequality and the need for equity. Also, equity issues can emerge from attempts to

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address exclusion but go one step further than equality. Equity means more than inclusion and equality. It points to the dedication of resources and intentions to address, for example, structural inequalities of the past or present and break the repetitive cycle of injustice (Bossu et al., 2019).

While the notions of EDI are connected to the debates and discourses about education in general (Dewidar et al., 2022), and about open education in particular, this might not always be the case. For example, Funes and Mackness (2018) discussed that while open education aspires to democratize education and promote EDI values, aspirations are difficult to realize in open online environments which enable multiple and conflicting perspectives. Also, a study by Lambert (2018) revealed that direct references to concepts specifically related to social justice, and more broadly EDI, in a selection of publications about openness were scarce. Instead, these concepts are almost taken for granted, specifically in the context of open initiatives, projects, and practices.

To the best of our knowledge, there is no existing literature review on EDI in the context of contemporary open education; however, there have been several systematic reviews about open education, some of which are considered seminal work while others are more contemporary. The reason for this is that the principles that underpin open education have been present on the education agenda for a significant time, exemplified by the inception of open and distance universities around 150 years ago (James & Bossu, 2014). The meaning of “open” has since evolved and today it goes beyond learning anywhere, anytime, and open entry and exit points, which were the foundations of open universities and their correspondence and distance education models (Kember, 2007; Wedemeyer, 1981).

Since then, a pool of terms that are part of open education has been created. One of them is *open educational resources* (OER). Although Wiley et al. (2014) concurred that due to their evolving nature, neither the term *open educational resources* nor the term *open* itself has an agreed-upon definition in the literature, it is generally agreed that research involving OER focuses on methods of producing and sharing open content, and their benefits. Another term is *open educational practices* (OEP), which broadens the practice from being focused on open content production and sharing of content to include pedagogy, scholarship, and teaching and learning practices (Bossu & Ellis, 2023). Koseoglu and Bozkurt (2018) explored two major strands of OEP research: those studies that discuss OEP in the context of OER (content), mostly in terms of their creation, adoption, and use, and those that discuss OEP concerning other areas, including open scholarship, open learning, and open teaching or pedagogy, while Cronin and MacLaren (2018) explored the literature to outline how the concept of OEP has evolved historically, contending that expansive conceptualizations of OEP acknowledge the complex practices involving teaching and learning.

For the purpose of this study and to avoid confusion regarding the open terms used in the literature explored in this paper, we adopted the definition proposed by dos Santos et al. (2016, p. 5), which states that open education is:

A way of carrying out education, often using digital technologies. It aims to widen access and participation for everyone by removing barriers and making learning accessible,

abundant, and customizable for all. It offers multiple ways of teaching and learning, building, and sharing knowledge. It also provides a variety of access routes to formal and non-formal education and connects.

Similar to open education, the ideas underpinning equity and inclusion in open and distance education have evolved over time. However, the assumption that EDI practices are implicitly adopted in open education initiatives and practices remain the same and this assumption creates a knowledge gap regarding what has been developed, addressed, and achieved about EDI in open educational contexts to date. This paper attempts to bridge this gap and presents a literature review of EDI in contemporary open education. We examined the current state of EDI in open education and the main suggestions for EDI implementation. Results indicate that practitioners should involve all stakeholders, including institutions, faculty members, and students, in EDI development to enhance OEP as well as in the cocreation of OER which need to consider culture, context, language, location, among others.

### **EDI in open education definitions**

As mentioned above, EDI have different meanings; however, their concepts and practices can overlap and build on each other (Bossu et al., 2023; Dewidar, et al., 2022; Fuentes et al., 2021). In order to fully understand these terms within the context of open education, we attempt to define them next. The distinct definitions of these terms also facilitate the discussion of the data that emerged later in this paper.

#### ***Equity***

It is crucial to critically engage with the differences between equity and equality. Equality means to provide everyone with an equal opportunity to participate or to measure everyone according to the same criterion; equality assumes that treating everyone the same is fair (Konow et al., 2020). Equity, on the other hand, considers treating everyone the same as unfair; fundamental to equity is the reality of intergenerational and structural inequalities based on any one or a combination of characteristics such as race, gender, socioeconomic background, culture, and language (Ainscow, 2020). Equity, in the context of open education, means that free or open does not necessarily translate into access to all learners from all contexts and backgrounds. It also does not inherently eliminate interlocking structures of oppression such as systemic racism, sexism, homophobia, and ableism (Williams & Anastasi, 2018).

#### ***Diversity***

Often, diversity in the context of open education refers to the diversity of licensing and materials than to diversity in the open education community or diversity as a focus of the community (Olcott, 2012). Gaskell (2019) referred to diversity as a value such as openness, and Yuchi and Zhujun (2019) spoke of OER's potential to address the diverse needs of educators and learners. OER also have the potential to address a

greater diversity of learner needs, such as students with accessibility needs (Navarrete et al., 2019).

However, Thomas (2019) believes that diversity is much more than a value but an intentional commitment to embrace differences whether in language, geopolitical location, gender, educational context, or culture. Diversity as a value in open education is an intentional and active embracement of difference. An interesting question that arises in the context of diversity and inclusion is whether there would be certain values or ideological positions that the open educational community will not embrace and not include (Bossu et al., 2019).

### ***Inclusion***

Villegas (2017) illustrated the notion of inclusion in contrast to exclusion, segregation, and integration. Inclusion should be much more than just respect for difference and diversity; rather, it should be a critical disposition allowing to question and disrupt dominant narratives that promote exclusion and discrimination based on gender, race, culture, or language, for example. Translating this critique of tolerance to the discourses about inclusion in open education would foreground the differential positions of power of the one who includes and the one who is included (Bossu et al., 2019). Like the position about diversity above, it is necessary to also ask what will not be tolerated or included. There seem to exist incompatible elements in diversity and inclusion. Instead of trying to resolve them, the focus should be on engaging with and understanding these incommensurable elements in diversity and inclusion (Dasli, 2019).

### ***Other definitions***

For some scholars, the social justice discourse includes, overlaps, and intersects with EDI (Poole et al., 2021); to incorporate justice into the more common formula of EDI, the acronym JEDI was created. Another acronym that has recently emerged is inclusion, diversity, equity, and accessibility (IDEA), which makes learner accessibility more prominent. Accessibility is the practice of making information, activities, or environments sensible, meaningful, and usable for as many people as possible (Andersen, 2022). Accessibility is also about equity, inclusive cultural practices, people, compliance, usability, and context (Iniesto et al., 2023).

### ***Methodology***

In this study, we adopted a constructivist approach to data collection and analysis, which are discussed below. Constructivism employs a range of methods and approaches to claim that there is no one single truth, and that truth and reality are constructed, build on, and are interpreted based on multiple realities (Fosnot & Perry, 2005). In the case of this study, truth and reality were constructed based on the authors of the papers included in this literature review. Their research and views were clustered and thematically analyzed to identify gaps and to inform recommendations

in the field. In addition, we used the following research questions to guide us in our attempts to undertake this study:

1. What is the current state of EDI in open education?
2. What are the suggestions for EDI implementation in open education?

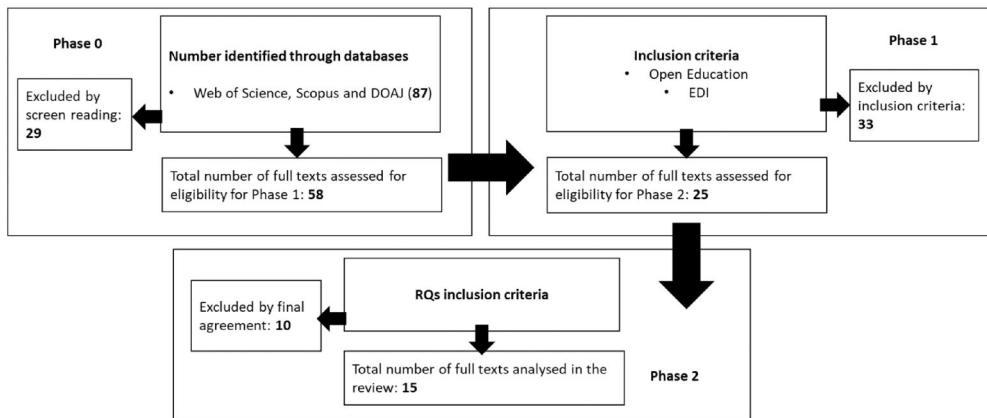
We followed recommendations from Moher et al. (2010) using a multiphase process for the review. We searched three research databases in August of 2022: Web of Science, Scopus, and the Directory of Open Access Journals. These were chosen because of their ranking as academic research databases and because of their broad coverage of studies relevant to this review across the globe. We included papers that were published in English and during the past 10 years (2012–2022). The rationale for using a 10-year timeframe for the papers was to uncover contemporary definitions of EDI and to understand EDI adoption in current open education initiatives. Literature sourced could include book chapters, journal articles, and conference proceedings. We used the following search string:

“open education” OR “open educational practices” OR “open educational resources” OR “open pedagogies” OR “open pedagogy”) AND (“equity” OR “equality” OR “diversity” OR “diverse” OR “inclusion” OR “inclusive” OR “EDI” OR “DEI”).

We did not include variant terms such as “justice,” “sustainable,” “higher education for good,” “ethics,” “ethical,” “collaborative,” or “cooperative” as they could have introduced concepts that although related to EDI, they were not specifically related to the scope of this study and to the definitions above.

These search terms identified 87 publications across the three databases. After removing duplicates, we manually screened the titles, abstracts, and keywords to check whether the paper should be included or not. We also made sure that papers adopted the EDI terminology as per the EDI definitions explored in this paper, that is, equity instead of equality. As a result, 58 studies were included in this phase (Phase 0). Phase 1 of the selection process consisted in applying additional exclusion criteria to the 58 studies, these were if the focus was not on open education and if there was no mention of the state of EDI. This phase resulted in 25 studies being identified. We then read those 25 studies in depth and categorized them based on their relevance in helping to answer this study’s research questions, on the definition or interpretation of EDI and on suggestions or guidelines provided for EDI in open education, ending up with a total of 15 studies for the review (Phase 2). [Figure 1](#) details the phases described.

[Table 1](#) details the sources used in the review ordered by type of research in chronological and alphabetical order. All, except for one conference paper, are journal publications, two publications cover all areas of EDI, while six publications focus on equity, six on inclusion, and only one on diversity. It is interesting to notice that there seems to be a gap of 6 years between the first publications in this area in 2012 (four papers) and subsequent works published in 2018, 2019, 2020, 2021, and 2022. *Distance Education* and the *Journal of Interactive Media in Education* (JIME) are the most represented journals, with five and three papers published respectively. This is because these journals have published several special issues on the field of open education over the past 10 years.



**Figure 1.** Selection process.

More than half (eight) of the identified articles are considered position papers. A position or conceptual paper is an essay that presents an arguable opinion or theory about an issue (Creswell & Clark, 2017), which is reasonable considering the novelty of the field of EDI in open education. Six papers adopted case studies to investigate the application of open education on students learning, three of them used qualitative research in their studies (Bossu et al., 2019; Cachia et al., 2020; Hodgkinson-Williams & Paskevicius, 2012), while two of them implemented mixed methods research (Cox et al., 2020; Lapum et al., 2022), and one used a quantitative approach (Nusbaum et al., 2020). Finally, one paper is about showcasing and discussing a diverse range of research projects related to inclusion (Iniesto et al., 2021).

In terms of contextualization, six of the papers identified kept a global or international perspective, which is usually linked to those addressed as position papers. Five papers have a focus on the Global North (Bossu et al., 2012; Hockings et al., 2012; Iniesto et al., 2021; Lapum et al., 2022, Nusbaum et al., 2020), while four papers on the African contexts (Bossu et al., 2019; Cachia et al., 2020; Cox et al., 2020, Hodgkinson-Williams & Paskevicius, 2012). Asia and Latin America lack representation in the review.

## Findings and discussion

In this section, we present the findings of this study together with the discussion. The presentation of the results follows a narrative approach (Pautasso, 2019), which involves gathering, critiquing, and summarizing the topic included in the review and related to the research questions to better understand the current state of EDI in open education.

### *The current state of EDI in open education*

We started the analysis of our sample (15 publications) by first considering the variety of activities and projects explored. Bossu et al. (2019) reported on the findings of scoping EDI in the context of the Global OER Graduate Network (GO-GN), a network





Table 1. Sources used in the review.

	Author(s)	Year <sup>a</sup>	Focus	Type of source	Name of source	EDI area	Type of research	Method and sample	Context
3	Willems & Bossu	2012	OER for equity	Journal	<i>Distance Education</i>	Equity	Position paper	Not applicable	International
10	Bossu et al.	2012	OER for social inclusion	Journal	<i>Distance Education</i>	Inclusion	Position paper	Not applicable	Australia
11	Hockings et al.	2012	Inclusive aspects in OER	Journal	<i>Distance Education</i>	Inclusion	Position paper	Not applicable	United Kingdom
12	Hodgkinson-Williams & Paskevicius	2012	EDI to the processes of OER production	Journal	<i>Distance Education</i>	Inclusion	Qualitative	Interviews with six students	Canada, South Africa, & Zimbabwe
4	Kalir	2018	Codesign in open education	Journal	<i>The International Journal of Information and Learning Technology</i>	Equity	Position paper	Not applicable	International
13	Funes & Mackness	2018	Inclusive aspects in open education	Journal	<i>Learning Media and Technology</i>	Inclusion	Position paper	Not applicable	International
1	Bossu et al.	2019	EDI in a network for open education	Conference paper	PCF9	EDI	Qualitative	Nine interviews and a workshop	Kenya
5	Nusbaum et al.	2020	OER for equity	Journal	<i>Frontiers in Education</i>	Equity	Quantitative	Survey with 774 psychology students	USA
6	Brown & Croft	2020	Social annotation in open pedagogy	Journal	<i>Journal of Interactive Media in Education</i>	Equity	Position paper	Not applicable	International
7	Cox et al.	2020	Open textbooks to promote equity	Journal	<i>Journal of Interactive Media in Education</i>	Equity	Mixed methods	Interviews with five authors; a survey to the 13 participants and the project field notes	South Africa
9	Cachia et al.	2020	Cultural diversity for the	Journal	<i>Araucaria</i>	Diversity	Qualitative	Seven interviews and a focus	Middle East

(continued)

Table 1. Continued.

Author(s)	Year <sup>a</sup>	Focus	Type of source	Name of source	EDI area	Type of research	Method and sample	Context
14 Croft & Brown	2020	adoption of open education Principles for an inclusive open education	Journal	<i>Distance Education</i>	Inclusion	Position paper	group with experts	International
8 Veletsianos	2021	OER for equity	Journal	<i>Educational Technology Research and Development Journal of Interactive Media in Education Today</i>	Equity	Position paper	Not applicable	International
15 Iniesto et al.	2021	Accessibility and inclusion in open education	Journal		Inclusion	Showcase projects	Not applicable	Spain
2 Lapum et al.	2022	EDI in OER	Journal		EDI	Mixed methods	16 students in focus groups and 33 in an open-ended survey	Canada

Note. <sup>a</sup>Ordered by year of publication.

to support PhD students in open education around the world. The authors collaborated with experts and practitioners to provide pointers for embracing and implementing EDI. In nursing education, Lapum et al. (2020) started with the hypothesis that nursing texts are socially situated and often reflect dominant discourses of white supremacy, patriarchy, and colonialism. With a focus on better understanding of how EDI can inform the design and production of OER, the authors followed participatory action research with students. While for the GO-GN network most participants were aware of the foundations of the EDI concepts, participants do not seem to have engaged much with EDI in the context of OER (Bossu et al., 2019). As for the study in nursing education, most nurse educators were able to design OER in ways that empower students and elevate the principles of EDI (Lapum et al., 2020).

### *Equity*

Equity seems the preferred topic in the context of OER production, in particular open textbooks. Nusbaum et al. (2020) described a practical case study with psychology students using open textbooks as OER. In another case study, Cox et al. (2020) included data from their open textbook community, incorporating a range of open textbooks across multiple disciplines. Psychology students performed equally well when using open textbooks compared to a traditional commercial textbook; they also rated the quality of the two textbooks similarly and accessed them at similar rates. However, students who were an ethnic minority reported dropping classes or receiving poor grades because they could not afford the commercial book (Nusbaum et al., 2020). On the other hand, the study by Cox et al. (2020) showed that open textbooks and their associated open practices provide a powerful means to address economic, cultural, and political injustices for students at risk. Open textbooks also bring benefits to educators as they have the potential to enhance practice and pedagogy to empower academics to build innovative curricula, giving a voice to marginalized groups and students power over how knowledge is created to transform education.

In terms of providing practical solutions to specific areas in learning and teaching, Brown and Croft (2020) proposed a framework for constructing social annotation assignments, as an alternative pedagogical approach. Social annotation assignments have the potential to increase equity in learning by reducing the tensions of unsafe online environments, since social annotation can potentially be ineffective for students from historically marginalized backgrounds (Brown & Croft, 2020). Another practical solution, in this case, for an equitable learning design strategy, is provided by Kalir (2018). His paper aimed to provide an overview of an equity-focused computer-supported collaborative learning initiative, establish design principles for equity in open education, and propose a model for designing open learning initiatives that prioritize both equity and openness.

Veletsianos (2021) is more critical and argued that while openness often assumes equity, higher education faces numerous systemic injustices that cannot be solely addressed by OER adoption. Open textbooks are an appropriate and worthwhile response to consider as higher education institutions shift to digital modes of teaching and learning. However, without scrutiny, such efforts may reflect or reinforce structural inequities. Thus, OER can be a mixed blessing, expanding inclusion and equity in

some areas but furthering inequities in others. In that sense, Willems and Bossu (2012) argued that while OER are often espoused as enabling educational equity, the reality is not always the case. Looking only at the positives of new educational methods can mask perpetuating challenges, which makes the open aspect of OER a misnomer; while equity reasons often underpin the provision of OER, challenges continue to be experienced by some in accessing open digital materials for learning.

### *Diversity*

Only one paper in the review explored diversity; Cachia et al. (2020) examined how open education is adopted in the Middle East region for capacity building in higher education. The authors examined how culture, in particular collectivism and power distance, influences the adoption of open education and looked at the relationship between the internationalization of tertiary education and open education. The authors' findings suggest that beyond the technical aspect and the development of content, the adoption of open education in the Middle East region is influenced by cultural aspects, which needs to be taken into consideration. Open education has the potential to transform and change some cultural barriers related to both power distance and collectivist cultures.

### *Inclusion*

Hodgkinson-Williams and Paskevicius (2012) reported on an empirical study of how postgraduate students assisted in the process of reworking the academics' teaching materials as OER. Postgraduate students have a wider range of experiences using new mediating tools to draw upon, more in-depth knowledge of alternative copyright rules, and an understanding of how to compose metadata and link materials to a range of hosting platforms and OER directories. That aspect is aligned with a study by Iniesto et al. (2021), which used the lenses of the GO-GN network to showcase different research projects for inclusive education, showing the challenges of achieving a more inclusive open education, such as the need to use accessibility metadata standards to improve the search and sharing of OER in open repositories and the recommendation to use frameworks to provide inclusive design feedback.

The aspect of sharing resources seems an important one, as indicated by the students (Hodgkinson-Williams & Paskevicius, 2012); they provided evidence of their commitment to sharing teaching materials with those usually excluded from the traditional university. In addition, students' engagement with the OER development process has revealed a growing sense of their agency in supporting the OER process.

Findings from Hockings et al. (2012) focused on the embedding and extending the principles of inclusive learning and teaching in higher education through the use and repurposing of an OER package within the University of Wolverhampton, which facilitates understanding of the concepts and principles underpinning inclusion in professional development.

Bossu et al. (2012) discussed the role of open and distance learning to widen participation and promote social inclusion within Australian higher education. They argued that the adoption of OER may further assist national policies to succeed in widening participation and reaching socially excluded groups who have previously

had limited access to pathways to higher education. Despite the potential of OER, Australian higher education has no policy in place yet for encouraging the adoption of OER. In terms of OEP, Croft and Brown (2020) explored how discourse in the field of open education impacts the direction of research, practice, and advocacy. While current discourse claims to remove barriers to equity, these presumptions with no action or reflection may perpetuate marginalizing practices. This point was also made by Funes and Mackness (2018), who claimed that open education aspires to democratize education and promote inclusion, but these aspirations are difficult to realize in open, online environments, which enable multiple, and often conflicting, perspectives and communication styles.

### ***Suggestions for EDI implementation in open education***

In this section, we explore some of the suggestions and recommendations for the implementation of EDI in open education found in this literature review. We carried out an in-depth reading of the publications followed by a content analysis approach (Harwood & Garry, 2003). Table 2 summarizes key suggestions for EDI implementation for each of the three concepts, including the reference of the authors who proposed them. In the next subsections, we expand on those suggestions.

#### ***Equity***

The distinction between equity and equality should be understood in open education to help further those who need support the most. The meaning of equity should recognize barriers which might be intergenerational and part of a historical legacy affecting individuals and communities. The context in which equity should operate should embrace openness to critics and equal participation, nurturing ownership and deepening open practices (Bossu et al., 2019). In that sense, there are two groups of recommendations we found under the theme of equity in open education: those linked to both institutions and educators and those related to students:

1. Institutions and educators: Critical social annotation can make online classrooms more equitable; to do so, three key areas should be considered: learning space (improving discussion in learning management systems), student empowerment, and knowledge creation that considers equitable learning experience (Brown & Croft, 2020). Equity-oriented design should be considered whenever scholars, designers, and educators pursue a project that takes serious commitments to both educational equity and educational openness (Kalir, 2018). If a design team intends to create digital technology that surpasses concern for access and use, then robust design methods are needed to build new questions and possibilities as equity-oriented outcomes. Faculty members should consider transitioning from commercial to open textbooks. Instructional designers could support faculty in implementing OER and open practices, and libraries could offer professional development in this area and advocate for such practices as the adoption of open textbooks (Veletsianos, 2020).

**Table 2.** Key suggestions for EDI implementation in open education.

	Key suggestions
Equity	<ul style="list-style-type: none"> <li>• Understanding of equity and equality (Bossu et al., 2019)</li> <li>• Applying equitable critical social annotation (Brown &amp; Croft, 2020)</li> <li>• Designing equity-oriented OER with cocreation (Cox et al., 2020, Kalir, 2018)</li> <li>• Maintaining the quality of students' education (Nusbaum et al., 2020)</li> <li>• Transitioning to open textbooks (Veletsianos, 2020)</li> <li>• Contextualising OER (Willems &amp; Bossu, 2012)</li> </ul>
Diversity	<ul style="list-style-type: none"> <li>• Understanding of diversity (Bossu et al., 2019)</li> <li>• Attending observable and nonobservable characteristics of diversity in OER (Lapum et al., 2020)</li> <li>• Including OER in various languages and cultural contexts (Cachia et al., 2020)</li> </ul>
Inclusion	<ul style="list-style-type: none"> <li>• The need for institutional policies (Bossu et al., 2012)</li> <li>• Considering marginalised voices and sense of belonging (Bossu et al., 2019)</li> <li>• Attending to the use of language in OER (Funes &amp; Mackness, 2018; Lapum et al., 2020)</li> <li>• Creating inclusive spaces for contribution and collaboration (Croft &amp; Brown, 2020)</li> <li>• Video production practice (Hockings et al., 2012)</li> <li>• Coauthoring in OER (Hodgkinson-Williams &amp; Paskevicius, 2012)</li> <li>• Using linked data in open repositories (Iniesto et al., 2021)</li> </ul>

2. Students: OER development processes should include student contributions to shift power dynamics and give voice to those previously excluded from or marginalized in decision-making (Cox et al., 2020). Textbooks must be affordable to avoid negative outcomes for minorities (Nusbaum et al., 2020).

In terms of OER production and reuse, it is very important that the contextualization of resources is taken into consideration as the needs of students differ from institution to institution even within the same country, let alone from country to country (Willems & Bossu, 2012). It is not enough to simply translate a piece of OER from one language to another; such materials need to be extensively localized if they are to be educationally useful for most learners. The technological applications for learning resources, either OER or traditional teaching materials, should be suitable for the students needing to access those materials. Remote learners can also be excluded from mainstream education due to the lack of appropriate infrastructures, such as access to the university campus, broadband access, and instability in electrical supplies; if resources available are not relevant to the learner, OERs have limited utility.

### ***Diversity***

Diversity should not be limited to culture, race, ability, reproductive status, health, criminal record, class, or appearance. It is important to acknowledge the range of contexts underpinning diversity and the limitations of people's understanding of diversity to take appropriate actions. For example, open educational communities should run diversity assessments to further understand and support their members and stakeholders (Bossu et al., 2019). The value of incorporating examples of diversity into OER (Lapum et al., 2020) and the availability of OER in other languages accelerate the adaptation process and cultural relevance (Cachia et al., 2020).

### ***Inclusion***

Institutional policies are considered to be an important factor to promote the inclusive and effective adoption of OER. Educational institutions should develop policies and

activities to promote OER awareness and clarify issues related to intellectual property and quality assurance (Bossu et al., 2012). Other elements of inclusive open practices include considering marginalized voices, providing a sense of belonging and promoting justice in all practices (Bossu et al., 2019).

More specific suggestions for inclusive open education practices are:

- Learning management systems and repositories should foster environments that respect student privacy and autonomy and create inclusive spaces for contribution and collaboration.
- Educators should create safe, welcoming learning environments for students to offer contributions (Croft & Brown, 2020). There exists a potential for the use of linked data to integrate and extract resources from open repositories. If correctly labeled through metadata, OER can be found by educators and learners using faceted search engines.
- Educators should adopt frameworks such as universal design for learning to provide feedback on OER's inclusive design (Iniesto et al., 2021). The interaction of both educators and learners in those systems can produce useful feedback for educators designing the resources.
- The use of appropriate and user-friendly language in OER is an important component in enhancing learning and usability. OER need to have the learner in mind and not merely consider the text as an expression of knowledge (Lapum et al., 2020). The language used in education and technology can be opaque, obtuse, and often self-serving; inclusive language can offer a way to unpack behavioral norms (Funes & Mackness, 2018).
- For video production, the focus should change from students to teacher according to the activities; but in all cases, the intention is to capture incidents and interaction that demonstrates principles of inclusive practice: (a) create safe and inclusive spaces by getting to know students individually and by setting a code of classroom conduct that is based on participation, collaboration, the sharing of knowledge and experience, trust, and respect, (b) use strategies that harness students' knowledge and experience, connecting theory and propositional knowledge to students' lives and backgrounds, (c) prepare, choose resources, and teach in such a way that is reflexive of their own identity, beliefs, and assumptions (Hockings et al., 2012).
- Cocreation: In terms of being able to make OER socially inclusive, postgraduate students can assist academics in reconceptualizing the purpose of teaching materials for a public audience. Given the fact that they are students themselves, they can note where the material is not relevant or where information needs to be added, removed, or placed in a specific sequence to make the materials comprehensible as stand-alone resources. They may also be able to help with translations of the materials if they have the necessary capability. Given their knowledge of open platforms available on cloud-based services or institutional repositories, postgraduate students can help upload, update, or delete OER materials, and ensure that they have a suitable license, descriptive metadata, and captivating resource images (Hodgkinson-Williams & Paskevicius, 2012).

## Conclusion and final considerations

Using a constructivist lens, we have examined the current state of EDI in open education and provided suggestions for implementing EDI based on thematic analysis and a review of 15 papers. The selected papers offered a range of applications and perspectives on EDI. Some focused on specific elements of EDI, such as equity, while others addressed multiple aspects. This demonstrates the importance and diversity of EDI practices in open education. However, the diversity of EDI practices and the various definitions associated with EDI, including social justice and accessibility, have added complexity to the process of selecting articles for this systematic review. We aimed to understand the different views of authors and the implications of EDI in each paper. Another limitation of this research is that it only includes papers published in English, diminishing the diversity and inclusivity of the study. Therefore, it is crucial to conduct further research and systematic reviews in different languages to gain a better global understanding of EDI in open education.

It is interesting to note that most of the theoretical (position) papers included in this review have an international audience in mind and come from universities and contexts in the Global North (9 papers). Conversely, the majority of practice and research-based papers originate from the Global South (4 papers). This could be seen as an attempt by the Global North and Western cultures to counterbalance their negative impacts on the Global South throughout history. However, practitioners in the Global North must be mindful not to repeat past mistakes, where Western practices, including educational practices, were perceived as superior and adopted over local approaches. Therefore, EDI practices developed for Global North contexts may not be suitable for Global South contexts.

Regarding the implementation of EDI in open education, it appears that some of the recommended practices suggested by the authors in this review overlap, similar to the variations in definitions of EDI. For instance, increasing stakeholders' understanding is recommended across all three concepts of equity, diversity, and inclusion. Another example is the recommendation for co-creation of content and knowledge, which promotes both diversity and inclusion. Additionally, considering language and contexts is suggested as a means to enhance diversity and inclusion in education. However, there are also recommendations that could support progress in all three concepts but are only linked to one. For example, the development of appropriate institutional policies is only mentioned in connection with inclusion but should encompass equity and diversity as well.

Despite the different practices, contexts, and recommendations discussed in the papers included in this review, the message remains clear: successful development and implementation of EDI require understanding, collaboration, and a willingness to empathize with others. By doing so, we can establish an open education system that is equitable, diverse, and inclusive, and one that acknowledges and avoids repeating past injustices. We hope that this review contributes to the advancement of such an inclusive open education system and informs future research and practice in this field.



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