

The role of Open Educational Resources (OER) in democratizing learning in Pakistan: policies, practices and pitfalls

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Abstract

Purpose – This study examines the role of Open Educational Resources (OER) in democratizing learning in Pakistan by analyzing how national policies and institutional practices shape access, openness, localization, participation and learner support in higher education.

Design/methodology/approach – The study uses qualitative documentary and policy analysis. Seventeen national, institutional and international documents were purposively selected and analyzed through a hybrid coding strategy combining UNESCO's 2019 OER action areas with inductive theme development. The analysis focuses on national policy frameworks and two institutional cases: Allama Iqbal Open University and Virtual University of Pakistan (VU).

Findings – The findings show that Pakistan's OER-related initiatives have expanded digital access but remain constrained by centralized policymaking, limited localization, infrastructure inequalities, weak pedagogical integration and unclear open licensing. The study identifies a recurring gap between digital availability and genuine openness.

Originality/value – The study contributes to the OER and open and distance learning literature by showing that democratization depends not only on access to digital materials but also on legal openness, contextual relevance, institutional capacity, learner support and stakeholder participation.

Keywords Open educational resources, Democratization of learning, Educational equity, Digital learning

Paper type Research article

Introduction

In recent decades, the quest for equitable access to quality education has intensified, particularly in relation to the United Nations Sustainable Development Goal 4, which calls for inclusive and equitable quality education and lifelong learning opportunities for all. Within this global agenda, Open Educational Resources (OER) have emerged as an important means of widening access to learning by reducing barriers of cost, geography and institutional exclusivity (Romero-Ariza *et al.*, 2025). OER refers to teaching, learning and research materials in any medium that are either in the public domain or released under an open licence permitting no-cost access, reuse, adaptation and redistribution (UNESCO, 2012). Since the term was introduced by UNESCO in 2002 and later reinforced through the 2012 Paris OER

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Declaration and the 2019 UNESCO Recommendation on OER, OER have increasingly been linked with broader commitments to inclusive and participatory education. The concept of democratizing learning is rooted in accessibility, equity and participation (Nykyopets *et al.*, 2023). It envisions an educational ecosystem in which learning resources are available to individuals regardless of their socio-economic status, geographic location, or institutional affiliation. However, democratizing learning requires more than access alone; it also involves learner engagement, localized knowledge production and more participatory forms of curriculum development.

In developing countries, where educational systems are often constrained by limited funding, inadequate infrastructure and teacher shortages, the potential impact of OER is especially significant (Romero-Ariza *et al.*, 2025). In many parts of South Asia and Sub-Saharan Africa, learners continue to face limited access to updated textbooks, digital learning tools and high-quality instructional materials. OER can help address these gaps by providing relevant and adaptable content at little or no cost. Open licensing also enables educators to adapt materials to local linguistic and cultural contexts, thereby increasing relevance and learner engagement (Sincuba, 2024). Yet OER adoption in developing countries remains uneven because of structural, technical and cultural barriers, including the digital divide, weak institutional support, limited educator awareness, a lack of localized content, concerns about quality and the dominance of English-language resources in major OER repositories (Ngimwa and Wilson, 2012). These challenges show that the need to examine not only how OER can democratize learning, but also the conditions that shape its implementation (Mutua, 2025).

Against this backdrop, this study explores the role of OER in democratizing learning in Pakistan, focusing on its benefits, limitations and systemic conditions. While substantial research has examined the technical and pedagogical dimensions of OER, this study contributes by situating Pakistan's OER trajectory within its policy, linguistic and infrastructural landscape. The analysis draws on conceptual insights, national policy documents and institutional case materials from Pakistani universities. The central aim of the paper is to assess the extent to which OER contributes to democratizing learning in Pakistan's higher education system. The study argues that the democratizing potential of OER in Pakistan is shaped not only by access, but also by licensing practices, localization, pedagogical integration and stakeholder participation in policy and implementation. In doing so, it addresses the following research questions:

- RQ1. How do Pakistan's national OER-related policies and strategies frame OER as a means of expanding access and democratizing learning?
- RQ2. What barriers and tensions (structural, institutional and pedagogical) are evidenced in policy and institutional documents that limit OER's democratizing potential?
- RQ3. How do the documented OER practices of AIOU and VU align with UNESCO's 2019 OER Recommendation action areas, and where do gaps or contradictions remain?

Open education and democratizing learning: conceptual and policy perspectives

OER research has moved beyond definitional debates to wider discussions of openness, equity and participation in education. While open licensing remains central, the field increasingly distinguishes between simple access to digital content and meaningful openness that enables adaptation, localization, collaboration and learner participation. This distinction is important because resources may be freely accessible yet remain pedagogically or legally closed. The theoretical basis of this study is grounded in educational equity, the public good perspective and Amartya Sen's capability approach, which emphasizes expanding people's freedoms and opportunities through access to knowledge. From this perspective, OER can support inclusive learning by reducing financial and legal barriers (Farrow, 2017). However, access alone does

not automatically produce educational democratization. OER must also be evaluated in relation to pedagogical openness, cultural relevance, linguistic inclusion and the ability of learners and teachers to adapt and co-create knowledge. The idea of “pseudo-openness” is therefore useful for this study because it describes situations in which resources are visible or downloadable but not genuinely open for reuse, remixing, or redistribution. This study applies this critical lens to examine whether OER-related developments in Pakistan move beyond digital delivery toward more equitable and participatory learning.

The global momentum for OER has been shaped by organizations such as UNESCO and the Commonwealth of Learning (COL). [UNESCO's \(2012\)](#) Paris OER Declaration and 2019 OER Recommendation formalized international commitments to promote OER through national policies, capacity building, inclusive access, sustainability and international collaboration ([UNESCO, 2019](#)). These policy instruments are important for the present study because they frame OER not merely as free content but as part of a broader system of open licensing, institutional support, quality improvement and lifelong learning.

In addition to UNESCO and COL, the International Council for Open and Distance Education (ICDE) and the Asian Association of Open Universities (AAOU) are directly relevant to Pakistan's OER context. ICDE's work on open, flexible and distance learning emphasizes that openness should not be reduced to the online distribution of learning materials; it should also be connected with quality assurance, learner support, flexible access, institutional capacity and inclusive learning design ([Chand et al., 2023](#)). This is particularly relevant because Pakistan's OER-related initiatives are largely embedded in Open and Distance Learning (ODL) institutions such as Allama Iqbal Open University (AIOU) and technology-mediated systems such as Virtual University of Pakistan (VU). From an ICDE perspective, democratizing learning through OER therefore requires digital access as well as sustainable systems for quality, teacher readiness, accessibility and learner engagement.

The AAOU perspective is equally important because it situates Pakistan within a wider Asian ODL ecology. As a regional association of open universities and distance-education institutions, AAOU promotes cooperation, professional exchange, quality enhancement and the sharing of ODL practices across Asia ([Asian Association of Open Universities, n.d.](#); [Bandalaria, 2018](#)). AIOU and VU operate within this regional context, where open universities are using digital platforms, massive open online courses (MOOCs) and open learning materials to reach geographically dispersed and non-traditional learners. However, regional evidence also shows persistent challenges of localization, infrastructure inequality, learner support and institutional capacity ([Jung et al., 2011](#); [Zuhairi et al., 2020a, b](#)). Therefore, OER democratization in Pakistan should not be measured only by the number of online resources available, but by whether those resources are openly licensed, pedagogically useable, locally adaptable and supported through quality ODL systems ([Nayak et al., 2020](#); [Zuhairi et al., 2020](#)).

Together, UNESCO, COL, ICDE and AAOU provide a broad framework for evaluating OER. UNESCO foregrounds open licensing, policy development, capacity building, inclusion, sustainability and international cooperation; COL emphasizes OER for development, access and institutional capacity; ICDE highlights quality, flexibility and learner support; and AAOU brings a regional Asian perspective on open universities, quality assurance and institutional transformation. This combined framework allows Pakistan's OER developments to be assessed not only against global OER principles but also against the practical expectations of ODL systems in Asia. It is also consistent with research published in the AAOU Journal, which emphasizes that ODL systems should be evaluated through quality assurance, learner support, institutional readiness and equitable access rather than access expansion alone ([Zuhairi et al., 2020a, b](#); [Zuhairi et al., 2020](#)).

The wider international OER movement also provides useful context, but it is most relevant here in relation to the principles of reuse and adaptation. Initiatives such as Massachusetts Institute of Technology (MIT) OpenCourseWare, Creative Commons (CC) and other open learning platforms helped demonstrate how university-level content could be shared beyond

institutional boundaries (Nath, 2022). These developments reflect Wiley's (2007) "4 R's of openness": reuse, revise, remix and redistribute. This framework remains important because it clarifies that OER is not simply about viewing or downloading content; it is about enabling educators and learners to adapt materials to local needs.

In developing countries, the potential value of OER is especially significant because of resource constraints, teacher shortages and unequal educational access. Examples from India, South Africa and other Global South contexts show that OER and digital platforms can expand access, reduce costs and support learner engagement (Dutta, 2023; Hodgkinson-Williams and Trotter, 2018; Mncube, 2024). However, these experiences also show that openness can remain limited when resources are externally produced, English-dominant, weakly localized, or disconnected from local pedagogical needs. In Pakistan, the Higher Education Commission (HEC) has endorsed digital libraries and open content through initiatives such as the National Digital Library and pilot projects supporting MOOCs and OER platforms, but much of the content still depends on externally produced resources, raising concerns about localization and cultural relevance (Das and Singha, 2023).

Despite its promise, OER adoption in developing countries continues to face several challenges. The digital divide remains a major obstacle, especially in rural and underserved regions where Internet access may be limited, unreliable, or expensive. Faculty resistance, limited awareness, concerns about quality and lack of institutional incentives can also hinder OER adoption (Santosh and Panda, 2016). Localization and language barriers are equally important because many OER platforms remain dominated by English-language content and may not reflect local examples, curricula, or cultural contexts. Licensing complexity further limits adaptation, particularly when educators are unfamiliar with Creative Commons permissions or institutional copyright rules. Finally, policy and institutional inertia can slow implementation when national OER policies are unclear, weakly enforced, or poorly coordinated (Das and Singha, 2023). These challenges provide the conceptual basis for examining whether OER in Pakistan functions as a genuinely democratizing practice or mainly as an access-oriented digital delivery strategy.

Methodology

This study uses a qualitative documentary analysis design to examine how OER is framed, governed and operationalized in Pakistan's higher education context. This methodology was selected because the study focuses on policy discourse, institutional positioning and implementation logic as expressed in official and publicly available documents rather than on participant perceptions gathered through interviews or surveys. The study is informed by a qualitative interpretivist paradigm, which is appropriate for understanding the meanings, values and policy intentions embedded in educational documents and institutional discourses (Creswell and Poth, 2017). Since the study explores how OER is framed and positioned within Pakistan's educational system, an interpretivist approach allows a contextualized examination of policy meanings, implementation assumptions and barriers that may not be visible through quantitative indicators alone.

The research design employed is documentary analysis, which involves the systematic review and interpretation of publicly available policy documents, institutional frameworks and global declarations related to OER. This approach is especially relevant for studying government policies, implementation gaps and alignment with international frameworks (Bowen, 2009). The documentary method allowed the study to identify patterns in how OER, openness, access, localization and institutional responsibility are represented across national and institutional texts. The analysis used both deductive and inductive content analysis. Deductive codes were developed from UNESCO's 2019 OER Recommendation, particularly its five action areas: building capacity, developing supportive policies, promoting effective inclusion, encouraging sustainable models and facilitating international cooperation. These codes guided the initial analysis of national policies, strategic plans and institutional

documents. Inductive coding was then used to identify Pakistan-specific themes, including localization, infrastructure disparities, licensing ambiguity, equity and the tension between digital delivery and pedagogical openness.

Insights from *Asian Association of Open Universities Journal* (AAOUJ) literature on quality assurance, learner support and ICT-supported ODL were also used during interpretation, particularly when assessing whether digital access translated into meaningful educational openness (Nayak *et al.*, 2020; Zuhairi *et al.*, 2020a, b; Zuhairi *et al.*, 2020). A cross-case matrix was used to compare how AIOU and VU documents reflected UNESCO's OER action areas and where recurring implementation tensions appeared, such as openness versus institutional control and platform emphasis versus pedagogy.

Coding was conducted manually by the author in multiple rounds. In the first round, documents were read closely and coded against UNESCO's five OER action areas. In the second round, emergent Pakistan-specific themes were identified, compared across documents and refined through repeated reading and memoing. As a single-author qualitative documentary study, the analysis did not involve inter-coder reliability testing. Instead, analytical rigour was supported through transparent coding logic, iterative theme refinement, cross-document comparison and explicit alignment between the research questions, data sources and final themes.

The primary sources of data were official policy documents, strategic plans, reports, institutional websites and programme-related materials published by national and university-level bodies relevant to OER, open learning, digital education and ODL in Pakistan. These sources were selected because they provide formal evidence of how OER-related ideas are framed, governed and operationalized in policy and institutional practice.

AIOU and VU were selected as illustrative institutional cases because they represent Pakistan's mainstream distance and online higher education infrastructure. AIOU is the country's largest ODL university with a nationwide student base, while VU is Pakistan's flagship technology-mediated public university. Together, the two cases enable a focused cross-case comparison of how OER is positioned and operationalized within national-level digital learning strategies.

- (1) *HEC ODL Policy (approved 2021; revised 2024)*: This includes national strategies for integrating OER into university education, especially under the Digital Learning and Skills Enrichment Initiative (DLSEI).
- (2) *HEC's Vision 2025*: This policy outlines the commission's strategic commitment to e-learning, virtual universities and open content for public sector institutions.
- (3) *COL Reports on Pakistan (2018–2022)*: These documents evaluate Pakistan's progress in adopting open learning models and identify gaps in capacity-building and localized content creation.
- (4) *UNESCO's 2012 Paris Declaration and 2019 OER Recommendation*: These global frameworks act as benchmarks for evaluating national alignment and commitment.

Supplementary data were drawn from:

- (1) *University websites and course portals* (Virtual University of Pakistan, AIOU), which offer insights into platform-specific OER use.
- (2) *Published empirical studies* on digital learning adoption and OER perception in Pakistan.

Documents were selected through purposive sampling using four criteria: (1) direct relevance to OER, open learning, digital learning, or open and distance education in Pakistan, (2) institutional or policy significance at the national or university level, (3) publication recency, with priority given to documents published from 2010 onward and (4) substantive content

related to implementation, regulation, strategy, licensing, access, or pedagogical practice. Documents were excluded if they were duplicate web materials, purely promotional notices, undated pages without policy substance, or sources lacking clear relevance to the research questions. Using these criteria, a final corpus of 17 policy and programme-related documents was analyzed.

[Table 1](#) summarizes the main categories of documents included in the analysis. These documents were used as an evidence base for tracing how OER, digital access, licensing, localization, learner support, infrastructure and institutional capacity are framed across national, institutional and international sources. In addition to the documents listed in the table, ICDE- and AAOU-related materials and selected empirical studies were used to contextualize Pakistani OER practice within wider ODL debates.

This study has several limitations. As a documentary analysis, it relies on publicly available policy and institutional materials and therefore cannot directly capture how OER policies are experienced or interpreted by teachers, students, or administrators. The visibility of institutional practice is also shaped by what universities choose to publish online, which may result in uneven documentary depth across cases. Documentary evidence cannot fully resolve the gap between policy intention and implementation practice. Future research should therefore include interviews, surveys, or institutional case studies to examine OER implementation in practice.

Results

This section presents case-based insights into the adoption and implementation of OER in Pakistan. It draws on national policy frameworks, particularly HEC’s DLSEI, and institutional evidence from AIOU and Virtual University of Pakistan (VU).

The DLSEI, launched by the HEC of Pakistan in 2018 in partnership with Coursera, represents one of the most structured attempts to expand access to online learning resources nationwide. Through this initiative, HEC aimed to provide access to global online courses for students and faculty across Pakistan ([Higher Education Commission, Pakistan, 2022](#)). Published analyses suggest that by 2021, several public sector universities had integrated Coursera-supported learning opportunities into their programmes ([Merchant and Ishaq, 2021](#)). However, the initiative relies heavily on global, often Western-centric, platforms, with limited emphasis on localization,

Table 1. Overview of documents included in the analysis

Document category	Document/source	Institution/body	Year	Relevance to the study
National policy	ODL Policy	HEC Pakistan	2024	National regulatory and policy framing
Strategic policy	Vision 2025; Higher Education Commission, Pakistan (2017)	HEC Pakistan	2017	National digital and higher education strategy
Programme documentation	DLSEI materials	HEC Pakistan	2022–2025	National implementation of digital learning/OER access
International benchmark	Paris OER Declaration	UNESCO	2012	Global normative framework
International benchmark	OER Recommendation	UNESCO	2019	Analytical benchmark for coding
Regional/open learning	Pakistan-related reports	COL	2018–2022	Open learning implementation context
Institutional materials	Websites, portals, course information	AIOU	Multiple years	Institutional OER-related practice
Institutional materials	Websites, portals, course information	VU	Multiple years	Institutional OER-related practice

Urdu-language resources, or participatory content development. This suggests that access is being operationalized mainly as digital reach rather than as full educational openness.

This pattern is also visible in the wording of HEC policy documents. The HEC ODL Policy (2024) frames its vision as “Providing all education seekers with an equal opportunity to access quality education through the ODL mode” (HEC, 2024, p. 5). It also requires the use of digital methods and tools for communication and states that the use of Learning Management Systems is mandatory for online course delivery (HEC, 2024, pp. 2, 17). Although the policy mentions “localized/contextualized content” (HEC, 2024, p. 2), its stronger operational emphasis falls on access expansion, digital delivery and learning management system (LMS)-based implementation. By contrast, it provides less explicit guidance on open licensing, reuse, remixing, or community-based content development. The policy framing of OER therefore remains technology-centred, often treating OER as an access mechanism rather than as a transformative pedagogical practice.

AIOU, as Pakistan’s largest ODL institution, is a natural site for OER-related practice. AIOU’s policy and institutional materials show a clear emphasis on widening access through online systems, learning management platforms, multimedia materials and alternative delivery arrangements. Sajjad and Khattak (2019) note that AIOU’s movement toward digitized learning materials was shaped by HEC directives and internal reforms aimed at improving access and reducing costs. They found that AIOU used modular content in Portable Document Format (PDF) and multimedia formats, distributed through LMS and offline modes such as USBs and TV lessons. These practices are important for geographically dispersed learners, particularly in rural and underserved areas.

However, the AIOU case also shows the limits of access-oriented digital provision. The documentary record provides limited evidence that AIOU learning materials are consistently released under open licences permitting adaptation, redistribution, remixing, or translation. For example, the AIOU Postgraduate Diploma (PGD) Prospectus emphasizes online admissions and directs students to use the university’s online systems and Campus Management System (CMS) portal (AIOU, 2025, p. viii). This indicates a strong institutional emphasis on digital access and platform-based student services. At the same time, the available documentation does not consistently clarify whether learning materials are openly licensed for reuse or localized adaptation. The AIOU case therefore suggests progress in digital availability, but only partial movement toward the fuller permissions associated with OER.

Virtual University of Pakistan (VU) presents a similar pattern. Established in 2002 by HEC, VU was designed as a digital-first institution and provides degree and certificate programmes through online and technology-mediated systems. It has developed extensive digital courseware, including video lectures, digitized books, assessments and LMS-based learning resources. These features position VU strongly within Pakistan’s digital learning landscape. However, its model appears closer to broadcast e-learning than to open pedagogy, with limited evidence that learners can remix, translate, adapt, or contribute to course materials.

VU’s institutional documents strongly emphasize access, inclusion and procedural flexibility. For example, its Admission Policy and Regulations state that the University “shall be open to persons of either sex, transgender and of whatever religion, race, class, creed, colour or domicile, or wherever located” who meet academic requirements (Virtual University of Pakistan, 2021, sec. 1.1). The same document emphasizes fairness, transparency, equitable access and online application management (Virtual University of Pakistan, 2021, secs. 4.3–4.4). These statements support the access dimension of ODL. However, the documentary evidence is less explicit about whether VU course materials are released under Creative Commons or equivalent open licences. As Merchant and Ishaq (2021) observe, the distinction between “free” and “open” content remains a recurring issue in Pakistani institutions. The VU case therefore reinforces the finding that digital accessibility does not automatically amount to formal OER openness.

Across the national and institutional documents, recurring patterns were visible in how access, delivery, openness and institutional control were framed. The content analysis of

Table 2. Major themes derived from the documentary analysis of national policy and institutional practices

Coding	Sub-theme	Themes
Centralized policy, lack of consultation, top-down directives, weak feedback, HEC-led, compliance-based	Non-participatory national policy	Top-down OER Policy
English-only content, foreign pedagogy, cultural mismatch, no Urdu, Western MOOC bias, imported examples	Limited contextual adaptation	Lack of Localization
No CC license, read-only access, copyright confusion, faculty unaware, restricted reuse, download-only	Misunderstood open access	Partial Openness
Platform-centric, no interaction, static learning, broadcast model, lecture-based, passive consumption	Delivery over pedagogy	Technological vs. Pedagogical Orientation
Rural exclusion, no Internet, offline USBs, lack of labs, poor connectivity, unequal bandwidth	Infrastructure access gaps	Disparities in Infrastructure

policy and university materials identified five major themes: top-down OER policy, lack of localization, partial openness, technological rather than pedagogical orientation and infrastructure disparities. These themes are presented in [Table 2](#).

[Table 2](#) summarizes the five recurrent themes identified across the documentary corpus. These themes emerged through combined deductive coding based on UNESCO’s OER action areas and inductive coding focused on Pakistan-specific implementation conditions. Rather than representing isolated problems, the themes are interrelated. Centralized policymaking influences localization, weak licensing contributes to only partial openness and technological emphasis often overshadows pedagogical transformation. Infrastructure disparities cut across all other themes by shaping who can access, adapt and benefit from OER in practice.

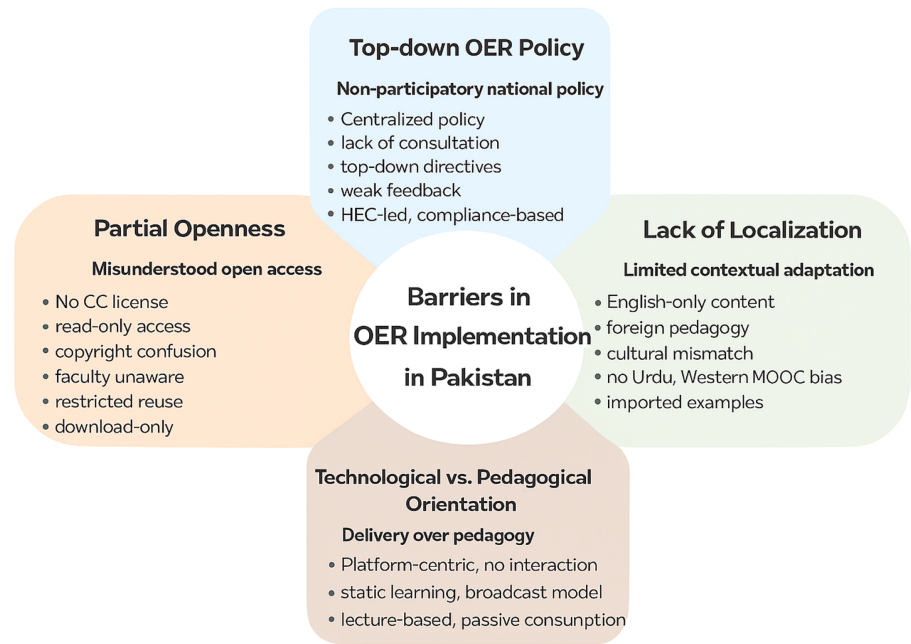


Figure 1. Barriers to OER implementation in Pakistan

To avoid presenting Figure 1 as an unsupported conceptual model, each barrier was retained only when it appeared in the documentary corpus and was also supported by relevant OER or ODL literature. Centralized policy was identified through the dominance of HEC-led regulatory frameworks and national platform partnerships; limited localization was identified through reliance on English-medium and externally produced digital content; partial openness was identified through the absence of explicit open-licensing permissions in institutional materials; technological orientation was identified through repeated emphasis on LMS use, online portals, video lectures and platform delivery; and infrastructure disparity was identified through the continuing need for low-bandwidth, offline and alternative access arrangements for dispersed learners.

Figure 1 synthesizes the five barriers that emerged repeatedly across the documentary corpus and are also supported by wider OER and ODL literature. These barriers should not be read as isolated observations, but as evidence-informed categories derived from the combined analysis of policy documents, institutional materials and prior research. Table 3 presents the documentary evidence, supporting literature and analytical interpretation for each of the barriers identified in Figure 1.

The first barrier, centralized policy, is reflected in the dominance of national-level directives and platform partnerships in Pakistan's OER-related initiatives, particularly through HEC-led digital learning frameworks. While such policy direction can support system-wide expansion, the reviewed documents emphasize digital delivery, institutional compliance and platform-based access more clearly than participatory design or stakeholder co-creation. This finding is consistent with research on Asian ODL, which shows that policy-driven expansion requires institutional participation, quality assurance and local ownership to become sustainable (Jung *et al.*, 2011; Zuhairi *et al.*, 2020a, b).

Table 3. Evidence base for the barriers presented in Figure 1

Barrier in Figure 1	Documentary evidence in this study	Supporting literature	Analytical interpretation
Centralized policy	HEC-led ODL policy provisions, DLSEI implementation materials and national-level platform partnerships	Jung <i>et al.</i> (2011), Zuhairi <i>et al.</i> (2020a, b)	OER development is shaped mainly through top-down policy direction rather than participatory institutional or community-level design
Limited localization	Heavy reliance on English-medium and externally produced online content, with limited evidence of systematic Urdu or regional-language adaptation	Hodgkinson-Williams and Trotter (2018), Arinto <i>et al.</i> (2017), Zhang <i>et al.</i> (2019)	Access alone does not democratize learning when resources are not linguistically, culturally and pedagogically adapted
Partial openness	AIOU and VU materials are digitally accessible, but open licences for reuse, remixing, translation and redistribution are not consistently visible	Wiley (2007), UNESCO (2019), Miao <i>et al.</i> (2016)	Public availability should not be treated as equivalent to OER unless legal permissions for adaptation and reuse are explicit
Technological rather than pedagogical orientation	Strong emphasis on LMS use, online admissions, video lectures, course portals and platform-based delivery	Ehlers (2011), Selwyn (2013), Chand <i>et al.</i> (2023)	Technology expands delivery, but democratization requires learner agency, interaction, open pedagogy and institutional support
Infrastructure disparity	Policy attention to access expansion and alternative delivery reflects continuing inequalities in connectivity, devices, bandwidth and digital readiness	Ngimwa and Wilson (2012), Santosh and Panda (2016), Ochieng and Gyasi (2021)	OER cannot function as an equity tool where learners lack the material conditions needed to access, use, adapt and benefit from open resources

The second barrier, limited localization, is visible in the reliance on global platforms, English-medium resources and limited evidence of systematic Urdu or regional-language adaptation. This matters because OER research in the Global South shows that openness is weakened when resources are not linguistically, culturally, or pedagogically aligned with learners' contexts (Arinto *et al.*, 2017; Hodgkinson-Williams and Trotter, 2018). In Pakistan's multilingual and socio-culturally diverse context, localization is therefore not an optional supplement but a condition for meaningful educational democratization.

The third barrier, partial openness, concerns the distinction between free access and legally open reuse. The reviewed institutional materials show that students can often view, download, or access digital learning resources, but they do not consistently indicate whether those resources are released under open licences that permit reuse, revision, remixing, translation, or redistribution. This distinction is central to OER theory because resources that are merely available online are not necessarily OER in the formal sense (Wiley, 2007; UNESCO, 2019; Miao *et al.*, 2016). The Pakistani case therefore illustrates the difference between digital access and genuine openness.

The fourth barrier is the dominance of technological delivery over pedagogical transformation. Across the reviewed documents, strong emphasis is placed on learning management systems, online portals, video lectures and platform-based delivery. These tools are important for widening access, but they do not automatically ensure open pedagogy, learner agency, collaborative knowledge creation, or meaningful interaction. Prior research similarly cautions that open and online education can remain transmission-oriented if it focuses mainly on content delivery rather than learning design, learner support and pedagogical transformation (Ehlers, 2011; Selwyn, 2013; Chand *et al.*, 2023).

The fifth barrier, infrastructure disparity, continues to shape who can benefit from OER in practice. Policy documents emphasize digital access and online systems, but rural and underserved learners in Pakistan may still face unstable Internet, limited access to devices, low bandwidth, electricity disruptions and uneven digital literacy. OER literature shows that digital resources cannot democratize learning where learners lack the material conditions needed to access, use, adapt and benefit from them (Ngimwa and Wilson, 2012; Santosh and Panda, 2016; Ochieng and Gyasi, 2021). Infrastructure is therefore not merely a technical issue; it is a core equity condition for democratizing learning through OER.

Overall, these five barriers show that Pakistan's OER-related development has expanded digital availability but has not yet fully addressed the legal, pedagogical, linguistic, institutional and infrastructural conditions required for meaningful openness. OER initiatives may therefore remain access-oriented unless they are supported by open licensing, localization, participatory design, learner support and equitable infrastructure.

Discussion

The findings point to wider conceptual and policy implications for OER in Pakistan. They suggest that the democratizing role of OER depends not only on whether resources are made digitally available, but also on how openness is defined, implemented and supported in practice. Pakistan's OER landscape shows that openness can function both as an opportunity and as a constraint. National digital learning initiatives and institutional platforms have widened access to educational content, but this expansion has often been shaped by centralized decision-making, limited localization, weak licensing clarity and insufficient pedagogical integration. As a result, access has expanded more rapidly than meaningful openness.

The appeal of OER in developing countries lies in its potential to reduce barriers such as geographical isolation, high textbook costs and limited faculty availability. For Pakistan, where many learners live outside major urban centres and face uneven access to higher education, OER represents a practical route to educational inclusion (Santosh and Panda, 2016). However, the evidence also points to important implementation gaps. The reliance on external platforms such as Coursera through DLSEI and the continued use of non-localized

English-medium content limit the relevance and inclusivity of OER. As [Hodgkinson-Williams and Trotter \(2018\)](#) argue, OER initiatives must engage local values, languages and knowledge systems if they are to become socially meaningful. The Pakistani experience therefore reflects a wider Global South challenge: policy enthusiasm for OER is not always matched by institutional readiness, digital infrastructure, localization, or pedagogical support.

One of the most persistent critiques in the OER literature is that access is often treated as an end in itself. The findings of this study support that concern. In Pakistan, OER-related initiatives have expanded digital availability, but availability alone does not guarantee meaningful openness. Where licensing is unclear, localization is limited and pedagogical integration is weak, access remains important but incomplete as a democratizing strategy. Technological infrastructure is necessary, but it is not sufficient. As [Selwyn \(2013\)](#) notes, meaningful learning requires critical engagement, interaction and learner autonomy, not merely bandwidth or login credentials. When platforms are emphasized more than pedagogy, OER risks being reduced to a content-delivery mechanism rather than functioning as a participatory educational practice.

Localization and licensing are therefore central to the interpretation of the findings. The documents reviewed suggest that OER-related provision in Pakistan remains shaped largely by standardized and centrally driven content models. This limits the extent to which resources reflect local languages, cultural contexts, curricula and learner realities. Although AIOU and VU provide large volumes of video lectures, e-books and digitally accessible learning materials, the reviewed documents do not consistently show that these materials are released under Creative Commons or equivalent open licences. This limits reuse, remixing, translation and redistribution, which are core elements of OER. The absence of a clear national open licensing policy also creates ambiguity for faculty and institutions. This reflects wider Global South concerns that openness remains limited when institutional policy, educator agency, localization and social inclusion are not adequately supported ([Arinto et al., 2017](#); [Hodgkinson-Williams and Trotter, 2018](#)).

Reconceptualizing OER as a public good requires moving beyond the assumption that online availability is sufficient. Openness becomes educationally meaningful when learners and educators can access, adapt, reuse and contextualize resources. From this perspective, OER policy should not be treated only as a digital or technical initiative, but as part of a broader commitment to educational equity, participation and justice.

These issues are not only nationally specific but also speak to broader challenges in open and distance education systems internationally. The Pakistani case is relevant for countries where governments and open universities use digital platforms, MOOCs and open repositories to widen participation in higher education. Its wider contribution lies in showing that digital expansion does not automatically produce democratization unless it is supported by explicit open licensing, contextual adaptation, pedagogical integration, learner support and equitable infrastructure.

The Indian experience provides a useful comparison. India has invested in national digital learning platforms such as Study Webs of Active-Learning for Young Aspiring Minds (SWAYAM), the National Programme on Technology Enhanced Learning (NPTEL), e-PG Pathshala and the National Digital Library of India ([Singh, 2022](#)). These initiatives have expanded access to online courses and learning materials, including for learners in ODL systems. However, research on Indian ODL and digital learning shows that access for underserved groups still depends on connectivity, language, learner support, institutional readiness and meaningful integration of digital resources into learning processes ([Nayak et al., 2020](#); [Singh and Kakkar, 2022](#); [Kulal et al., 2024](#)). This comparison is important for Pakistan because HEC's DLSEI similarly widens access to external digital courses, but the findings of this study show that access alone remains insufficient where licensing, localization and pedagogical integration are underdeveloped.

The South African and wider African OER experience reinforces this point. OER research in South Africa links openness with decolonization, epistemic inclusion and the adaptation of educational materials to local knowledge systems and learner realities ([Hodgkinson-Williams](#)

and Trotter, 2018; Mncube, 2024). Similarly, the Research on OER for Development project shows that OER adoption across Global South contexts depends not only on availability, but also on agency, institutional policy, localization and social inclusion (Arinto *et al.*, 2017). These studies support the present finding that OER cannot democratize learning if students and teachers remain only consumers of externally produced content. They must also be able to adapt, translate, remix and contribute resources.

The discussion shows that OER policy in Pakistan should move from platform-based access toward a fuller openness framework. This framework should include clear open licensing guidelines, Urdu and regional-language adaptation, faculty capacity-building, learner support, quality assurance and infrastructure planning. Without these elements, OER may remain a mechanism for digital content delivery rather than a transformative tool for democratizing learning. Table 4 summarizes the broader international implications of Pakistan’s OER experience for policy and practice in comparable ODL contexts.

The findings also have significance for Asian open universities. Studies published in the AAOU Journal are particularly relevant because they examine the same institutional field in which Pakistan’s OER development is located. Nayak *et al.* (2020) show that ICT-supported ODL can help reach underserved communities, but only when supported by appropriate institutional strategies, learner support and contextual responsiveness. Similarly, Zuhairi *et al.* (2020a, b) and Zuhairi *et al.* (2020) demonstrate that quality assurance and student success in open universities depend on teaching and learning processes, learner support, infrastructure, human resources and institutional mechanisms. These studies support the argument that the democratizing value of OER should not be judged only by the number of platforms or resources available, but by the extent to which learners can legally, pedagogically and materially use those resources.

Based on the findings and comparative evidence, the implications of this study extend beyond Pakistan to other resource-constrained ODL systems in Asia, Africa and the wider Global South. The Pakistani case shows that OER policy should clearly distinguish between digital access and legal openness. For Pakistan, this means that HEC, AIOU, VU and other

Table 4. International implications of the Pakistani OER case

Context	Example	Lesson from Pakistan’s case	Implication for OER policy and practice
South Asian digital learning systems	India’s SWAYAM, NPTEL, e-PG Pathshala and National Digital Library of India	National platforms can expand access but still require language support, learner support and institutional integration	OER strategies should combine platform expansion with regional-language resources, faculty development and mechanisms for adaptation and reuse
African and Global South OER initiatives	OER Africa and South African debates on decolonizing e-learning content	OER can reproduce dependency if resources remain externally produced, English-dominant, or culturally distant	Localization, indigenous knowledge and community participation should be treated as core OER principles rather than optional additions
Asian open universities	AAOUJ evidence on quality assurance, learner support and ICT-supported ODL	Open universities cannot rely only on digital content delivery; student success depends on support, quality systems and contextual responsiveness	OER implementation should be embedded in learner support, quality assurance, assessment design and institutional capacity building
Resource-constrained ODL systems	Rural and underserved learners in Pakistan and comparable contexts	Digital access does not automatically mean educational inclusion where learners lack connectivity, devices, bandwidth or digital literacy	OER policy should include low-bandwidth, offline, mobile-friendly and affordable access models

public institutions should adopt clear open licensing guidelines, especially for publicly funded learning materials. More broadly, free online access should not be treated as equivalent to OER unless users have legal permission to retain, reuse, revise, remix and redistribute resources.

Localization should also be treated as a core equity principle. In Pakistan, this requires Urdu and regional-language resources, local examples, culturally relevant case studies and community participation in content development. In multilingual and postcolonial contexts, OER can support inclusion only when learners encounter materials that reflect their linguistic, cultural and social realities. The comparison with India and South Africa shows that national-scale platforms and open resources must be accompanied by language support, local adaptation and recognition of diverse knowledge systems.

Finally, OER implementation should be connected with pedagogy, learner support, quality assurance, infrastructure planning and regional collaboration. Digital platforms, video lectures and online materials can expand access, but they do not automatically create open educational practice. Faculty need support to integrate OER into teaching, assessment, collaborative learning and student knowledge production. Rural learners, low-income students and geographically dispersed communities also require low-bandwidth platforms, offline access options, mobile-friendly repositories, affordable devices and digital literacy support. Engagement with ICDE, AAOU, South Asian digital learning initiatives and African OER networks can further support knowledge exchange on licensing, localization, quality assurance and learner support.

Conclusion

This study examined how OER is framed and operationalized in Pakistan's higher education system through documentary analysis of national policy and institutional practice. Drawing on evidence from HEC policy initiatives, AIOU and Virtual University of Pakistan (VU), the study shows that OER-related developments have expanded digital access to learning resources, but their democratizing potential remains only partially realized.

The analysis demonstrates that key limitations persist, including top-down policymaking, limited linguistic and cultural localization, unclear open licensing frameworks, weak pedagogical integration and infrastructural disparities affecting rural and underserved learners. These findings suggest that OER should not be understood simply as online availability or free access. For OER to support democratization, learners and educators must be able to legally, pedagogically, linguistically and materially use, adapt and contribute to educational resources.

Although the study is grounded in Pakistan, its implications are relevant to open universities and digitally expanding higher education systems in Asia, Africa and other resource-constrained contexts. The Pakistani case shows that digital platforms and open repositories should not be treated as sufficient evidence of democratization unless they are supported by open licensing, contextual relevance, learner support, quality assurance, institutional capacity and equitable infrastructure. Future research should examine how faculty members, students and institutional leaders interpret and experience OER implementation in practice.

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