Journal of English Language Teaching
Vol. 67 No. 6 (November 2025)

Accessibility in MOOCs: A Bibliometric Analysis and Implications for English Language Courses

Joseph Vinoth M[1] & M. S. Xavier Pradheep Singh[2]

Abstract

Ensuring accessibility is a critical concern in the Massive Open Online Courses (MOOCs), given their foundational aim of providing inclusive and equitable access to education. This study presents a bibliometric analysis of research on accessibility in MOOCS to trace the conceptual development of the construct, identify key themes and gaps, and examine how accessibility is framed within MOOC research. A total of 229 Scopus-indexed journal articles published between 2002 and 2025 were analysed using thematic mapping, keyword co-occurrence, and bibliographic coupling techniques. The findings reveal a clear conceptual progression in accessibility research, moving from early access-oriented interpretations centred on availability and participation, towards compliance-driven approaches focused on disability and web accessibility standards, and more recently towards broader notions of inclusivity. Despite this evolution, accessibility remains conceptually underdeveloped and is predominantly framed as a technical or compliance-related requirement rather than as a pedagogical principle. The analyses also highlight the fragmented nature of accessibility research, with limited integration between technical, pedagogical, and learner-centred perspectives. Notably, English language MOOCs do not emerge as a distinct research theme, indicating a significant gap. The study underscores the need to consolidate accessibility as a learner-centred, inclusive, and pedagogically grounded concept in MOOC design and delivery.

Keywords: Accessibility; Massive Open Online Courses; Bibliometric Analysis; English Language MOOCs; Pedagogical Accessibility

INTRODUCTION

The immense popularity of MOOCs and online courses in the post-pandemic period has grown exponentially and, in turn, has encouraged institutions to offer complete online degree programmes. MOOCs have globalised and democratised access to education beyond the constraints of time, space, location, and financial costs (Hueso-Romero et al., 2021). The availability of MOOCs on almost every imaginable subject, offered from basic to advanced levels and serving purposes such as self-interested learning, academic credits, continuing education, lifelong learning, and professional development, positions MOOCs as a universal educational paradigm. MOOCs have also emerged as a vital source of education in war-affected and crisis contexts (Habib, 2023).

Learners enrolled in a MOOC can access course materials and video lectures, participate in discussions, complete assessments, and receive certification from their homes or from anywhere in the world. However, MOOC learners continue to face a range of barriers such as motivation and engagement issues, digital fatigue, language barriers for non-native English speakers, lack of pre-requisite knowledge, insufficient support for learner diversity, and accessibility challenges (Sanchez-Gordon & Luján-Mora, 2018). These accessibility challenges call into question the perception of MOOCs as universally accessible, inclusive and open learning environments. The persistence of such challenges also undermines the United Nations' Sustainable Development Goal 4, which aims to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. Ensuring accessibility in MOOCs is therefore pivotal, particularly because MOOCs promote lifelong and autonomous learning (Iniesto, Tabuenca, et al., 2021).

[1] Ph.D. Research Scholar, Department of English, St. Joseph's College (Autonomous), Affiliated to Bharathidasan University, Tiruchirappalli, Tamil Nadu, India. 0000-0002-5929-0554 josephvinothlit@gmail.com

[2] Assistant Professor, Department of English, St. Joseph's College (Autonomous), Affiliated to Bharathidasan University, Tiruchirappalli, Tamil Nadu, India. 0000-0002-8827-2494 xavierpradheep.sjc@gmail.com

Despite offering a single digital space for learners to access lectures, participate in discussions, and complete assessments, technological features related to accessibility are still underutilised. Accessibility in MOOCs extends beyond mere access to digital learning resources or enrolment in a course. Rather, it refers to the flexible and inclusive ways in which learners are able to access, engage with, and benefit from the course content and learning activities. A lack of accessibility adversely affects MOOC adoption (Ma & Lee, 2019) and becomes a significant barrier to learning. Given the continued importance of MOOCs in higher education and lifelong learning, persistent accessibility challenges position accessibility as a critical area of inquiry within MOOC research.

LITERATURE REVIEW

Accessibility in practice is enabling learners-in-need with equitable features or support systems to overcome disparities. In short, ensuring accessibility means that no learner is left behind by the course, the learning environment, or the MOOC ecosystem. There are various dimensions of accessibility, such as digital divides, finance, pedagogical, geographical, language, assistive technologies, multimodality and flexibility, gender and social background (Hansen & Reich, 2015; Kizilcec et al., 2017).

Studies have enumerated the vitality of accessibility in MOOCs across multiple dimensions. It significantly impacts learners' motivation to learn (Deshpande & Chukhlomin, 2017). Despite the growing need for accessibility, it remains unfulfilled due to the lack of awareness and agency, limited training, and infrastructural constraints (Decker & Beltran, 2022; Guilbaud et al., 2021; Lomellini et al., 2022; Pérez-Martín et al., 2021). Institutions create MOOCs as an industry standard, to fulfil institutional ranking criteria, and for reputational value (Pılı et al., 2018). However, there is little to no information on how course creators and institutions ensure accessibility (Fennelly-Atkinson et al., 2022). Accessibility is perceived as a compliance rather than as a way to support learner needs (Iniesto, McAndrew, et al., 2021). MOOC learners still face accessibility issues such as course interface complexity, insufficient support for assistive technologies, lack of translation features, lack of sign language support, and lack of alternative text for non-text materials (Iniesto & Rodrigo, 2016; Kosova & Izetova, 2020; Mohd Ashril et al., 2025). These issues severely affect learners with disabilities and special needs (Park et al., 2019). Most of the courses or MOOCs limit accessibility to the adoption of Web Content Accessibility Guidelines (WCAG), which is an international standard for making web content accessible for people with disabilities. The WCAG stipulates practices for web content accessibility, but it is not exhaustive of learners' accessibility needs. Research on accessibility in MOOCs is scattered across multiple disciplines, including education, technology, computer science, and applied linguistics, making it difficult to develop a coherent understanding of the field. Although Sanchez-Gordon and Luján-Mora's (2018) systematic literature review examined accessibility challenges in MOOCs between 2008 and 2016, it focused predominantly on learners with disabilities and excluded studies related to open access, developing nations, and underserved populations. The fragmented and discipline-specific nature of existing research partly explains why accessibility continues to remain an under-explored and inconsistently theorised concept within MOOC scholarship. There is a notable lack of studies that trace the development of accessibility in MOOCs as a concept and practice over time.

The importance of accessibility also becomes particularly pronounced in the context of English language MOOCs. English MOOC learners are often linguistically diverse, marginalised, and, in some cases, lack formal educational backgrounds. Research indicates that learners in English MOOCs face challenges related to language fluency, a lack of learner-learner interaction (Chong et al., 2024), insufficient support for individual differences (Zhang & Sun, 2023), low-resources, digital literacy, and socio-psychological factors (Kizilcec et al., 2017). As English MOOCs continue to expand globally, especially among migrant and refugee populations, the need to understand accessibility beyond technical compliance becomes increasingly critical (Molin-Karakoc, 2025).

In this context, a bibliometric analysis offers a systematic approach to mapping the scope, development, and fragmentation of research on accessibility in MOOCs. By synthesising research trends across disciplines and over time, such an analysis can help clarify how accessibility has been conceptualised, identify under-researched areas, and highlight implications for the design and delivery of English language MOOCs.

RESEARCH QUESTIONS

This study aims to answer the following research questions:

RQI: How has the concept of accessibility evolved in MOOC research over time, from access-oriented approaches to compliance-driven and pedagogical perspectives?

RQ2: What are the dominant research themes and under-explored areas within the literature on accessibility in MOOCs?

RQ3: To what extent is accessibility in MOOC research framed as a technical or compliance requirement rather than as a pedagogical principle?

RQ4: What implications do existing research trends and gaps in MOOC accessibility have for the design and delivery of English language courses offered through MOOCs?

METHODOLOGY

Bibliometric analysis is a well-established research procedure used to map published research across domains and to reveal the intellectual structure of a field (Donthu et al., 2021). By employing quantitative techniques to analyse large volumes of bibliographic data, bibliometric analysis enables researchers to identify dominant themes, research trends, and under-explored areas within a field. In the present study, bibliometric analysis is employed to trace the development of accessibility in MOOC research over time, identify thematic patterns, and examine how accessibility is conceptualised across studies, thereby addressing the research questions outlined earlier.

The study employs the SPAR-4-SLR protocol, which provides a systematic and transparent framework for assembling, arranging, and assessing literature in systematic reviews and bibliometric studies (Paul et al., 2021). This three-stage protocol ensures rigour, reproducibility, and clarity in the selection and analysis of research articles.

Assemble: Search & Selection

The Scopus database was selected as the primary source for retrieving bibliographic data due to its wide disciplinary coverage and consistency in indexing high-quality peer-reviewed journal articles. An advanced search string using Boolean operators was developed to retrieve the highest number of studies related to accessibility and MOOCs. The search was limited to journal articles published in English to ensure consistency and comparability across records.

The Scopus advanced search returned 288 results published between 2001 and September 17, 2025. This time span was selected to capture both early conceptualisations of accessibility in online courses and more recent developments in MOOC accessibility research, thereby enabling an examination of the evolution of the concept over time (RQ1). Table 1 presents the literature search criteria and parameters used in this study.

Table 1: *Literature search criteria and parameters*

Database	Scopus
Search Field	TITLE-ABS-KEY
Search String	"accessibility" AND ("online courses" OR "MOOC" OR "Massive Open Online Courses")
Document Type	Journal Articles
Language	English
Time Span Covered	2001 – 2025
Date of Search	September 17, 2025
Initial Records Retrieved	288
Final Records Selected for Analysis	229

Arrange: Screening & Data Preparation

To ensure relevance, the titles, abstracts, and author keywords of all retrieved articles were screened manually by the researchers. Studies that explicitly addressed accessibility in the context of MOOCs on online courses were retained for this bibliometric analysis. Based on the screening process, 229 were selected for inclusion, with publication years ranging from 2002 to 2025.

Bibliographic data, including publication year, author keywords, abstracts, citations, and references, were extracted for analysis. Author keywords were prioritised in the analysis due to their high availability (95.63%) and their direct reflection of authors' conceptual framing of accessibility. Synonymous and truncated terms were merged using the software's synonym function to ensure conceptual consistency across analyses. The following were the truncated and synonymous terms merged: Set 1 (massive open online courses; mooc; moocs; massive open online course), Set 2 (human; humans), Set 3 (online courses; online course), and Set 4 (distance education; education, distance; distance learning). This data preparation stage supports the identification of dominant and peripheral themes within MOOC accessibility research (RQ2).

Assess: Analysis & Synthesis

The study employed the Bibliometrix package (Aria & Cuccurullo, 2017) and VOS viewer software to conduct thematic mapping, keyword co-occurrence analysis, and bibliographic coupling. Each analytical technique was selected to address specific research questions.

Thematic mapping was used to examine the development and centrality of research themes related to accessibility in MOOCs. By analysing author keywords using the Louvain clustering algorithm, the thematic map helps trace how accessibility has evolved conceptually within MOOC research, thereby addressing RQ1 and identifying underdeveloped themes (RQ2).

Keyword co-occurrence analysis was conducted to examine relationships between key concepts associated with accessibility, such as instructional design, universal design, and web accessibility. This analysis provides insights into whether accessibility is predominantly framed as a technical or compliance-related concern or integrated into pedagogical discourse, thus directly addressing RQ3.

Bibliographic coupling analysis was used to examine shared references among highly cited studies and to identify clusters representing major research streams within MOOC accessibility literature. By revealing the fragmentation or convergence of accessibility-related research and the positioning of pedagogical and linguistic concerns within these clusters, this analysis contributes to addressing RQ2 and informs implications for English language MOOCs (RQ4). Table 2 summarises the bibliometric analysis techniques used in the study and their respective purposes.

Table 2: *Bibliometric Analysis Techniques*

S.No	Technique	Purpose
1	Thematic mapping	Identifies and visualises major research themes, their centrality and development, and highlights well-developed and underdeveloped areas in MOOC accessibility research.
2	Keyword Co-occurrence Analysis	Examines relationships among key concepts related to accessibility to understand how the construct is framed (e.g., access, compliance, pedagogy) within MOOC research.
3	Bibliographic coupling	Analyses shared references among studies to reveal dominant research streams, fragmentation of accessibility research, and implications of English language MOOCs.

The results of the bibliometric analyses are presented and interpreted in the Discussion section through figures and tables derived from thematic mapping, keyword co-occurrence, and bibliographic coupling analyses.

DISCUSSION

Evolution of Accessibility (RQ1)

The bibliometric findings indicate a clear evolution in how accessibility has been conceptualised within MOOC research. Early studies primarily framed accessibility as access to course materials through digital platforms, emphasising availability, enrolment, and participation across geographical and socio-economic boundaries. This access-oriented understanding aligned with the original promise of MOOCs as open and democratic learning environments.

As MOOCs became more institutionalised, accessibility increasingly shifted towards compliance-driven approaches, particularly in relation to learners with disabilities. Over time, research attention moved towards technical and policy-oriented concerns such as web accessibility standards, assistive technologies, and disability support. More recent studies reflect a gradual broadening of accessibility to include inclusivity for all learners, recognising accessibility as a spectrum rather than a binary condition. However, despite this conceptual progression, the findings suggest that accessibility has not yet been fully integrated as a pedagogical principle within MOOC research.

Dominant Themes and Under-Explored Areas (RQ2)

The thematic mapping analysis resulted in four theme-based clusters: massive open online courses, human, curriculum, and human-computer interaction. It also reveals that accessibility occupies a central position within MOOC research but remains weakly developed. As shown in Figure 1, accessibility is characterised by high centrality and low density, indicating that while the concept is widely acknowledged, it lacks conceptual depth and consolidation within the field. This positioning suggests that accessibility is considered important but has not matured into a well-developed research theme. The thematic characteristics and distribution of keyword clusters are detailed in Table 3.

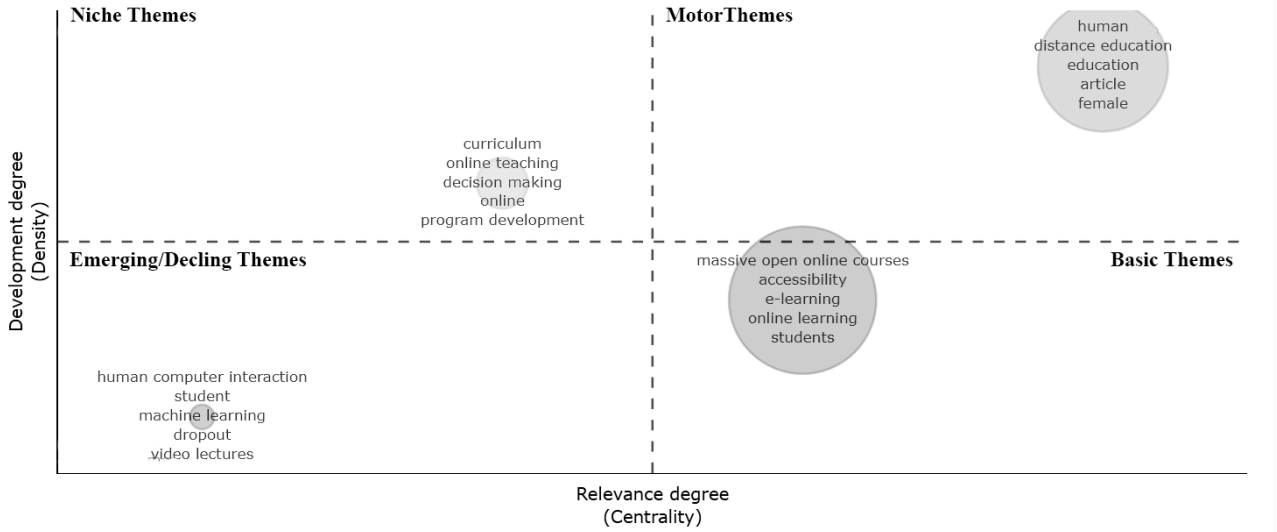

Figure 1: *Thematic Mapping of Author Keywords in MOOC Accessibility Research*

Table 3: *Thematic Clusters Identified Through Thematic Mapping*

Clusters	Callon Centrality	Callon Density	Rank Centrality	Rank Density	Cluster Frequency
massive open online courses	6.613	76.38	3	2	645
Human	10.7	146.401	4	4	400
Curriculum	4.326	105.19	2	3	44
human-computer interaction	2.669	54.365	1	1	21

The thematic mapping analysis also indicates that themes related to MOOCs, e-learning, and distance education appear as well-developed and dominant clusters, whereas areas such as curriculum design and human-computer interaction remain marginal or emerging. This imbalance highlights the limited engagement with pedagogical and design-oriented perspectives on accessibility. The absence of English Language MOOCs as a distinct thematic map further indicates the marginal positioning of linguistic and language-specific concerns within accessibility research.

The fragmented nature of accessibility research is further evident in the bibliographic coupling analysis conducted using VOS Viewer. This analysis produced a network of 57 research studies published between 2010 and 2024. Studies with fewer than five citations and zero link strength were excluded to ensure interpretability and reduce analytical noise. Based on shared references, the bibliographic coupling analysis identified 11 clusters that reflect the evolution of research trends in the field. Cluster 1 focused on general MOOC adoption, public perception, and the role of MOOCs in teacher development. Cluster 2 exclusively focused on various aspects of accessibility, including WCAG, caption quality, accessibility for cognitively impaired and visually challenged learners, and accessibility in both subject-specific and general online course design. Cluster 3 comprised studies on accessible videos, MOOC design challenges, and faculty and learner perspectives on MOOCs. Cluster 4 focused on accessibility for all learners, including students with disabilities, as well as course designers' perspectives on Universal Design for Learning (UDL) principles in MOOCS. Cluster 5 examined MOOC learners' motivation and engagement, along with strategies for mitigating drop-out. Cluster 6 grouped studies that focused on training educators on accessible and inclusive online course design, framework-based approaches to accessibility, and pedagogical and practical concerns related to UDL implementation in online courses. Cluster 7 primarily addressed MOOC adoption, success factors, and barriers. Studies in cluster 8 focused on strategies for student success and on improving student trust and engagement in MOOCS. Cluster 9 predominantly examined learner-learner interaction, collaboration, and learning activities in MOOCs. Cluster 10 focused on access, design, UDL guidelines for accessible MOOCs, and the impact of culture. Cluster 11 included studies on challenges to inclusive and sustainable education, student

evaluation of MOOCs based on UDL, and the lack of emotional expressiveness in text-to-speech outputs in online courses. As illustrated in Figure 2, studies addressing accessibility-related issues are distributed across multiple clusters with limited cross-cluster integration, indicating weak cumulative knowledge-building in this area.

Figure 2: *Bibliographic Coupling Network of Accessibility-Related MOOC Studies*

In the bibliographic coupling network figure, larger node sizes indicate higher citation counts of the respective articles. Highly cited studies focus on learner engagement (Hew, 2016), motivation (Kizilcec & Schneider, 2015), MOOC adoption (Ma & Lee, 2019) and UDL guidelines for accessible online instruction (Rogers-Shaw et al., 2018). Although Cluster 2 focused exclusively on accessibility, other accessibility-related studies, such as those addressing text-to-speech technologies, faculty and learner perspectives, MOOC design challenges, inclusive course design, learner interaction and collaboration, UDL guidelines for accessible MOOCs, and student evaluation of MOOCs, are dispersed across multiple clusters rather than forming a cohesive accessibility-focused research stream. The absence of a coherent cluster dedicated to English language MOOCs further reinforces the observation that accessibility research remains fragmented and insufficiently theorised, particularly in relation to language learning contexts.

Accessibility as Compliance versus Pedagogical Principle (RQ3)

The keyword co-occurrence analysis provides further insight into how accessibility is framed within MOOC research. The co-occurrence network shown in Figure 3 illustrates the relationships between keywords based on their co-appearance across the bibliographic data. Two major clusters emerge, positioning accessibility within the broader research field. The analysis indicates that accessibility, represented in cluster 1, is strongly associated with MOOCs, e-learning, and online learning, while its connections with instructional design, universal design, course design, WCAG, and web-accessibility remain comparatively weak. This pattern suggests that accessibility is predominantly approached as a technical or compliance-related concern rather than as an integral component of teaching and learning. Network metrics supporting these observations are presented in Table 4.

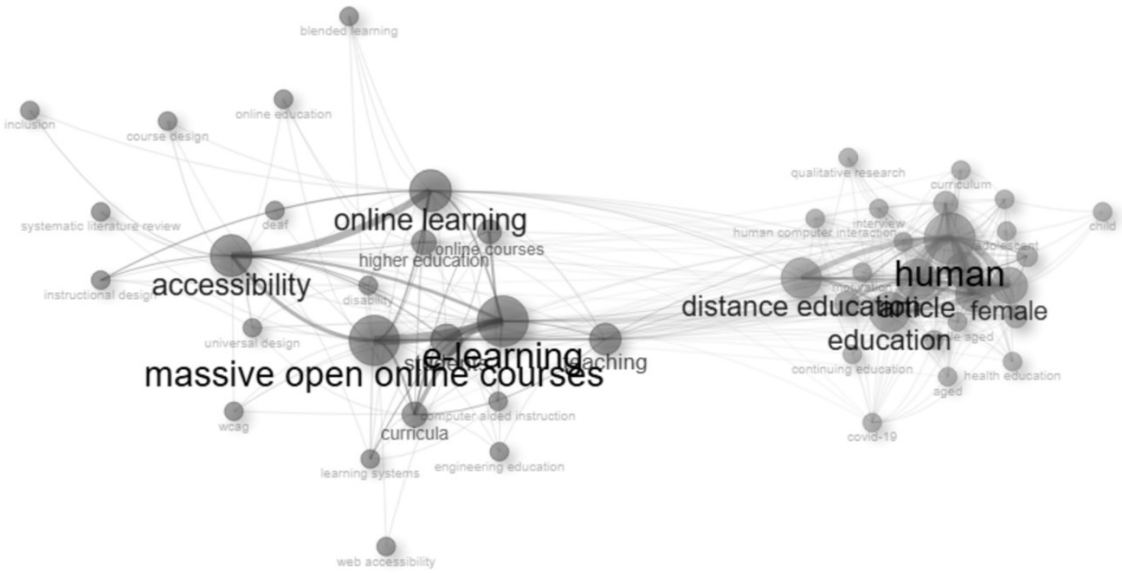

Figure 3: *Keyword Co-occurrence Network of Accessibility in MOOCs*

Table 4: *Network Metrics of Keyword Co-occurrence Analysis*

Node	Cluster	Betweenness	Closeness	PageRank
massive open online courses	1	121.7262816	0.014925373	0.047463492
accessibility	1	99.60005189	0.013888889	0.04562833
online learning	1	113.4551301	0.015151515	0.041592121
e-learning	1	155.3509617	0.016393443	0.057200162
higher education	1	8.956168333	0.012345679	0.018014178
students	1	17.33804386	0.013157895	0.031194205
online courses	1	4.175248991	0.012048193	0.017557606
curricula	1	6.164666711	0.012195122	0.025655765
teaching	1	55.15929281	0.015151515	0.034238142
disability	1	5.355324026	0.011764706	0.015388953
instructional design	1	0.116504854	0.009708738	0.010391256
online education	1	0	0.010309278	0.005560297
learning systems	1	0.061604583	0.011111111	0.012075359
universal design	1	0.499409114	0.010989011	0.010073639
computer-aided instruction	1	0.028037383	0.010752688	0.0108377
inclusion	1	0	0.009345794	0.005359793
wcag	1	0	0.010416667	0.006280572
blended learning	1	0	0.009708738	0.005302051
course design	1	0	0.009803922	0.005607504
systematic literature review	1	0	0.010204082	0.004959825
web accessibility	1	0	0.009708738	0.004642952
deaf	1	0	0.00952381	0.005380556
engineering education	1	0	0.010416667	0.007446782
human	2	92.03999348	0.015873016	0.06135429
distance education	2	42.6069642	0.015384615	0.042211239
education	2	40.74000693	0.015151515	0.044690564
female	2	27.94353677	0.014492754	0.042529786
male	2	27.12162568	0.014492754	0.041363335
adult	2	20.13473655	0.014285714	0.041151536
article	2	43.38003959	0.015384615	0.04806941
learning	2	4.971372766	0.013157895	0.023716856
covid-19	2	0.676627414	0.012345679	0.012381473
curriculum	2	0.554545542	0.011235955	0.010096704
internet	2	3.73025923	0.0125	0.023951958
middle aged	2	0.476597035	0.012345679	0.016546694
human experiment	2	0.821104162	0.011904762	0.019112768
medical education	2	0.275112649	0.012195122	0.013050389
questionnaire	2	1.915092797	0.012987013	0.021768036
adolescent	2	0	0.01	0.006946632
child	2	0	0.009433962	0.005570295
controlled study	2	1.196801439	0.010989011	0.014936159
health education	2	0.04949447	0.011764706	0.009277906
interview	2	1.439829901	0.011764706	0.015903118
motivation	2	0	0.011363636	0.006805734
qualitative research	2	0	0.01	0.007400354
human-computer interaction	2	0.635423469	0.011904762	0.010706126
aged	2	0.04323103	0.011494253	0.012047768
computer-assisted instruction	2	1.26087897	0.011764706	0.014794339
continuing education	2	0	0.00990099	0.005765288

The peripheral positioning of pedagogical concepts in relation to accessibility reflects a compliance-driven understanding, where adherence to standards such as WCAG is prioritised over pedagogical integration. While such standards are essential for ensuring baseline accessibility, their dominance in the literature suggests that accessibility is often treated as an add-on rather than embedded within course design, interaction, and assessment practices. Consequently, learner-centred considerations such as flexibility, feedback, engagement, and interaction remain under-represented in accessibility-focused MOOC research.

Implications for English Language MOOCs (RQ4)

The bibliometric findings have important implications for English language MOOCs. Across all analyses, English MOOCs do not emerge as a distinct or cohesive research theme, indicating that accessibility research has not sufficiently addressed linguistic and language-specific learning contexts. Given that English MOOCs serve diverse learner populations, including migrants, refugees, and learners from low-resource settings, this absence is particularly significant.

Although some studies address related issues such as learner interaction, motivation, multimodality, and inclusive design, these studies remain scattered and weakly connected to the broader accessibility discourse, as evidenced by the thematic and bibliographic coupling analyses (Figures 1 and 2). This fragmentation suggests that accessibility in English MOOCs is yet to be conceptualised as a pedagogical concern encompassing linguistic accessibility, culturally responsive content, and interaction-oriented course design.

Overall, the findings highlight the need for future research to move beyond compliance-oriented models and examine accessibility in English language MOOCs as a learner-centred and pedagogically grounded principle. Addressing this gap would contribute to a more inclusive understanding of accessibility that aligns with the diverse linguistic, cultural, and educational needs of English MOOC learners. Taken together, these findings position accessibility in English language MOOCs as a critical yet under-theorised pedagogical concern, warranting sustained empirical and design-oriented research.

LIMITATIONS

The findings and interpretations of this study are based on bibliometric data derived from titles, abstracts, author keywords, citation counts, and referenced sources indexed in the Scopus database. As such, the analyses reflect patterns in metadata rather than insights drawn from full-text content analysis. Consequently, the thematic and chronological interpretations, particularly those derived from bibliographic coupling, are limited to publication metadata and shared references rather than an in-depth examination of individual studies.

In addition, the reliance on a single database may have excluded relevant studies indexed in other databases or published as conference proceedings, book chapters, or non-English publications. While the use of Scopus ensures consistency and quality of indexed sources, this limitation may affect the comprehensiveness of the findings. Finally, as with all bibliometric studies, the results are influenced by authors' keyword choices and citation practices, which may not always fully capture the conceptual nuances of accessibility research.

CONCLUSION

This study mapped the development of accessibility in MOOC research and examined how the concept has evolved. The findings reveal a clear progression from early access-oriented interpretations towards compliance-driven approaches and, more recently, towards broader notions of inclusivity. Despite this evolution, accessibility remains conceptually underdeveloped and is rarely embedded as a pedagogical principle within MOOC research.

The analyses further demonstrate that accessibility continues to be closely associated with technical standards and disability-focused design, while pedagogical integration, interaction, and learner-centred considerations remain marginal. Although emerging studies on captions (Yabe, 2016), translation, and interaction signal potential shifts, accessibility research remains fragmented, limiting cumulative knowledge-building.

These patterns have important implications for English language MOOCs. English MOOC learners often require specific accessibility support, including mobile-friendly course design, translation and captioning in learners' spoken languages, culturally relevant content, and personalised feedback (Molin-Karakoc, 2025). However, English MOOCs are frequently criticised for being

knowledge-transmission oriented, offering limited opportunities for skill practice, interaction, and collaboration. Evidence suggests that English MOOC learners are more engaged when courses incorporate multimodality with scaffolding, interactive tasks, collaborative learning, and personalised feedback (Huang & Liu, 2024).

The absence of sustained research on accessible English MOOC design, implementation, and impact highlights a significant gap in the literature. Future research should therefore prioritise systematic reviews and empirical studies that examine accessibility for all MOOC learners beyond disability-focused frameworks. In particular, pedagogy-integrated accessibility, linguistic accessibility, socio-economic factors, and policy-level interventions warrant further investigation to consolidate accessibility as a learner-centred, inclusive, and pedagogically grounded concept rather than a compliance-driven requirement.

REFERENCES

Aria, M., & Cuccurullo, C. (2017). bibliometrix : An R-tool for comprehensive science mapping analysis. *Journal of Informetrics*, *11*(4), 959–975. https://doi.org/10.1016/j.joi.2017.08.007

Chong, S. W., Khan, M. A., & Reinders, H. (2024). A critical review of design features of LMOOCs. *Computer Assisted Language Learning*, *37*(3), 389–409. https://doi.org/10.1080/09588221.2022.2038632

Decker, J., & Beltran, V. (2022). Meeting the needs of all students: Online undergraduate students' use of support services. *International Journal of Online Pedagogy and Course Design*, *12*(1), 1–11. https://doi.org/10.4018/IJOPCD.295954

Deshpande, A., & Chukhlomin, V. (2017). What makes a good MOOC: A field study of factors impacting student motivation to learn. *American Journal of Distance Education*, *31*(4), 275–293. https://doi.org/10.1080/08923647.2017.1377513

Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research*, *133*(March), 285–296. https://doi.org/10.1016/j.jbusres.2021.04.070

Fennelly-Atkinson, R., LaPrairie, K. N., & Song, D. (2022). Identifying accessibility factors affecting learner inclusion in online university programs. *Distance Education*, *43*(4), 556–573. https://doi.org/10.1080/01587919.2022.2141607

Guilbaud, T. C., Martin, F., & Newton, X. (2021). Faculty perceptions on accessibility in online learning: Knowledge, practice and professional development. *Online Learning*, *25*(2), 6–35. https://doi.org/https://doi.org/10.24059/olj.v25i2.2233

Habib, M. (2023). Digital transformation strategy for developing higher education in conflict-affected societies. *Social Sciences & Humanities Open*, *8*(1), 100627. https://doi.org/https://doi.org/10.1016/j.ssaho.2023.100627

Hansen, J. D., & Reich, J. (2015). Democratizing education? Examining access and usage patterns in massive open online courses. *Science*, *350*(6265), 1245–1248. https://doi.org/10.1126/science.aab3782

Hew, K. F. (2016). Promoting engagement in online courses: What strategies can we learn from three highly rated MOOCS? *British Journal of Educational Technology*, *47*(2), 320–341. https://doi.org/10.1111/bjet.12235

Huang, F., & Liu, S. (2024). If I enjoy, I continue: The mediating effects of perceived usefulness and perceived enjoyment in continuance of asynchronous online English learning. *Education Sciences*, *14*(8), 880. https://doi.org/10.3390/educsci14080880

Hueso-Romero, J. J., Gil-Quintana, J., Hasbun, H., & Osuna-Acedo, S. (2021). The social and transfer massive open online source: Post-digital learning. *Future Internet*, *13*(5). https://doi.org/10.3390/fi13050119

Iniesto, F., McAndrew, P., Minocha, S., & Coughlan, T. (2021). A qualitative study to understand the perspectives of MOOC providers on accessibility. *Australasian Journal of Educational Technology*, *38*(1 SE-Articles), 87–101. https://doi.org/10.14742/ajet.6610

Iniesto, F., & Rodrigo, C. (2016). A preliminary study for developing accessible MOOC services. *Journal of Accessibility and Design for All*, *6*(2), 125–149. https://doi.org/10.17411/jacces.v6i1.117

Iniesto, F., Tabuenca, B., Rodrigo, C., & Tovar, E. (2021). Challenges to achieving a more inclusive and sustainable open education. *Journal of Interactive Media in Education*, *2021*(1). https://doi.org/10.5334/jime.679

Kizilcec, R. F., Davis, G. M., & Cohen, G. L. (2017). Towards equal opportunities in MOOCs: Affirmation reduces gender & social-class achievement gaps in China. *Proceedings of the Fourth (2017) ACM Conference on Learning @ Scale*, 121–130. https://doi.org/10.1145/3051457.3051460

Kizilcec, R. F., & Schneider, E. (2015). Motivation as a lens to understand online learners: Toward data-driven design with the OLEI scale. *ACM Trans. Comput.-Hum. Interact.*, *22*(2). https://doi.org/10.1145/2699735

Kosova, Y., & Izetova, M. (2020). Accessibility of massive open online courses on mathematics for students with disabilities. *Voprosy Obrazovaniya / Educational Studies Moscow*, *1*, 205–229. https://doi.org/10.17323/1814-9545-2020-1-205-229

Lomellini, A., Lowenthal, P. R., Snelson, C., & Trespalacios, J. H. (2022). Higher education leaders' perspectives on accessible and inclusive online learning. *Distance Education*, *43*(4), 574–595. https://doi.org/10.1080/01587919.2022.2141608

Ma, L., & Lee, C. S. (2019). Investigating the adoption of MOOCs: A technology–user–environment perspective. *Journal of Computer Assisted Learning*, *35*(1), 89–98. https://doi.org/https://doi.org/10.1111/jcal.12314

Mohd Ashril, N. A. N., Chee, K. N., Yahaya, N., & Abdul Razak, R. (2025). Barriers, strategies and accessibility: Enhancing engagement and retention of learners with

disabilities in MOOCs–A systematic literature review (SLR). *International Journal of Human-Computer Interaction*, *41*(14), 8846–8857. https://doi.org/10.1080/10447318.2024.2414892

Molin-Karakoc, L. (2025). Language MOOCs for refugee learners: Opportunities, barriers and design principles. *Teaching English as a Second or Foreign Language--TESL-EJ*, *29*(2). https://doi.org/10.55593/ej.29114int2

Park, K., So, H.-J., & Cha, H. (2019). Digital equity and accessible MOOCs: Accessibility evaluations of mobile MOOCs for learners with visual impairments. *Australasian Journal of Educational Technology*, *35*(6 SE-Special Issue 2019-Digital Equity), 48–63. https://doi.org/10.14742/ajet.5521

Paul, J., Lim, W. M., O'Cass, A., Hao, A. W., & Bresciani, S. (2021). Scientific procedures and rationales for systematic literature reviews (SPAR-4-SLR). *International Journal of Consumer Studies*, *April*, 1–16. https://doi.org/10.1111/ijcs.12695

Pérez-Martín, J., Rodriguez-Ascaso, A., & Molanes-López, E. M. (2021). Quality of the captions produced by students of an accessibility MOOC using a semi-automatic tool. *Universal Access in the Information Society*, *20*(4), 677–690. https://doi.org/10.1007/s10209-020-00740-9

Pıllı, O., Admıraal, W., & Sallı, A. (2018). MOOCs: Innovation or stagnation? *Turkish Online Journal of Distance Education*, *19*(3), 169–181. https://doi.org/10.17718/tojde.445121

Rogers-Shaw, C., Carr-Chellman, D. J., & Choi, J. (2018). Universal design for learning: Guidelines for accessible online instruction. *Adult Learning*, *29*(1), 20–31. https://doi.org/10.1177/1045159517735530

Sanchez-Gordon, S., & Luján-Mora, S. (2018). Research challenges in accessible MOOCs: A systematic literature review 2008–2016. *Universal Access in the Information Society*, *17*(4), 775–789. https://doi.org/10.1007/s10209-017-0531-2

Yabe, M. (2016). Benefit factors: American students, International students, and deaf/hard-of-hearing students' willingness to pay for captioned online courses. *Universal Access in the Information Society*, *15*(4), 773–780. https://doi.org/10.1007/s10209-015-0424-1

Zhang, Y., & Sun, R. (2023). LMOOC research 2014 to 2021: What have we done and where are we going next? *ReCALL*, *35*(3), 356–371. https://doi.org/DOI: 10.1017/S0958344022000246