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Research Article

Citation Dynamics and Impact of Articles in the Journal of Learning for Development: An Altmetric and Bibliometric Perspective

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ABSTRACT

Purpose: This study aims to conduct a comprehensive bibliometric and altmetric analysis of research articles published in the Journal of Learning for Development to examine publication patterns, citation impact, thematic trends, and online attention. **Design/Methodology/Approach:** Data were collected from the journal Web site, Google Scholar, and Altmetric.com, and analyzed using Microsoft® Excel, IBM Statistical Package for the Social Sciences, and VOSviewer. Bibliometric methods included citation analysis, keyword co-occurrence, and thematic mapping, while altmetric indicators were used to assess online engagement. **Findings:** The study reveals that research output is globally distributed but concentrated in a few leading countries, with India contributing the highest number of publications. Citation analysis identifies influential articles on open learning, mobile learning, massive open online courses, Open Educational Resources policies, and digital inclusion. A strong positive correlation (r=0.62, p<0.01) between citation counts and Altmetric Attention Scores indicates that online engagement is a meaningful predictor of scholarly impact. Keyword frequency and co-occurrence analyses highlight thematic clusters centered on open educational resources, technology-enabled pedagogy, and information and communication technology. Twitter and X dominate online attention, while Mendeley readership indicates substantial scholarly interest. **Originality:** This study provides novel insights into the intellectual structure, visibility, and evolving research priorities of Journal of Learning for Development, highlighting the interplay between traditional bibliometric measures and online attention metrics in the field of digital and open learning.

Keywords: Altmetrics, Bibliometrics, Citation analysis, Journal of Learning for Development (JLD), Keyword analysis, Mobile learning, Massive Open Online Courses (MOOCs), Open educational resources, Research impact.

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INTRODUCTION

The rise of Open and Distance Learning has catalyzed global discussions on accessibility, inclusion, and life-long learning. The Journal of Learning for Development (JLD), established by the Commonwealth of Learning, has become a key open-access platform disseminating research at the intersection of learning innovations and social development.

In recent years, the growing emphasis on open and technology enhanced learning has stimulated extensive research on digital education, particularly within journals dedicated to development-focused educational innovations. The JLD has emerged as a significant platform for disseminating scholarly work on Open Educational Resources (OER), Massive Open Online Courses (MOOCs), mobile learning, digital inclusion, and related themes. As digital scholarship evolves, traditional citation-based impact measures are increasingly complemented by alternative metrics, or altimetric, which capture online engagement through social media, news platforms, blogs, and reference managers. Understanding the relationship between these indicators is essential for assessing the visibility and influence of contemporary research. At the same time, analyzing publication patterns, keyword trends, and thematic networks provides insights into the evolving intellectual structure of the field. This study therefore, examines citation impact, Altmetric Attention Scores, geographic contributions, keyword frequencies, and online attention patterns within JLD, offering a comprehensive picture of its scholarly landscape and identifying emerging directions in global digital learning research.

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LITERATURE REVIEW

Research in the field of open and distance learning has increasingly emphasized the transformative potential of digital technologies in expanding educational access and improving learning outcomes. (Tait, 2016) highlights the developmental impact of open learning models, arguing that openness plays a critical role in democratizing knowledge in resource-constrained contexts. Complementing this perspective, (Anderson, 2017) demonstrates how mobile learning initiatives have gained prominence in Africa, where mobile technologies serve as practical tools for bridging educational gaps. A significant body of work has also examined the policy dimensions of openness; for instance, (Mishra, 2018) underscores the importance of robust OER policies in the Global South to ensure sustainable adoption and effective integration of open educational resources. The rise of large-scale online learning is further documented by (Perris, 2015), who analyzes the potential of MOOCs to support development-oriented learning at scale. Parallel to these discussions, (Traxler, 2019) explores digital inclusion strategies, noting that equitable access to emerging technologies remains essential for the success of open and online learning initiatives. Broader analyses by scholars such as (Wiley and Hilton, 2018; Veletsianos, 2020; Smith and Kumar, 2020; Richter and Naidu, 2016) further demonstrate how OER-enabled pedagogy and digital learning ecosystems continue to shape contemporary educational practices. Collectively, the literature suggests a strong trajectory toward technology-enhanced, open, and inclusive learning frameworks that align with global educational development goals.

STATEMENT OF THE PROBLEM

Growing significance of open and digital learning in global education, there remains a limited empirical understanding of how research published in the JLD is disseminated, cited, and engaged with across various scholarly and public platforms. Traditional citation metrics offer insight into academic impact, yet they do not fully capture the broader visibility of research in digital spaces, where altmetric indicators such as social media mentions, news coverage, and reader activity on platforms like Mendeley play an increasingly important role. Furthermore, the thematic evolution of the journal reflected through keyword patterns, co-occurrence networks, and geographic authorship trends has not been systematically analyzed. Without a comprehensive assessment of these dimensions, stakeholders lack a holistic understanding of JLD's research influence, its thematic priorities, and its position within the wider landscape of open and distance learning scholarship. This study addresses this gap by examining citation trends, altmetric attention, publication distribution, and thematic structures to provide an integrated evaluation of the journal's scholarly and digital impact.

METHODOLOGY

This study employed a quantitative bibliometric and altmetric analysis to examine the scholarly impact, thematic patterns, and online attention associated with articles published in the JLD. Bibliographic data, including article titles, authors, publication years, keywords, and citation counts, were collected directly from the journal's Web site and cross-verified using Google Scholar for citation accuracy. Altmetric indicators such as Twitter/X mentions, Facebook shares, blog postings, news coverage, Mendeley readership, and Wikipedia references were retrieved using the Altmetric.com Explorer platform. Data cleaning, tabulation, and descriptive statistical analysis were conducted using Microsoft® Excel and IBM SPSS Statistics (Version 28). Correlation analysis between citation counts and Altmetric Attention Scores (AAS) was performed in Statistical Package for the Social Sciences (SPSS) using Pearson's correlation coefficient to determine the strength and significance of relationships between variables. Keyword frequencies were computed using Excel, while thematic clustering and keyword co-occurrence mapping were carried out using VOS viewer (Version 1.6.x), a widely used visualization tool for bibliometric networks. VOS viewer facilitated the construction of network maps representing keyword linkages and thematic clusters within the corpus. Graphical representations such as bar charts, trend lines, and network visualizations were generated using a combination of VOS viewer, SPSS, and Excel. All data were analyzed systematically to ensure accuracy, and results were interpreted in line with established bibliometric and altmetric research methodologies. This software-supported approach enabled a comprehensive evaluation of JL4D's publication patterns, impact metrics, and thematic development.

SCOPE AND LIMITATIONS

This study focuses exclusively on research articles published in the JLD and examines their scholarly impact, thematic patterns, and online visibility. The scope includes analysis of citation counts, AAS, keyword frequencies, geographical distribution of authorship, and keyword co-occurrence networks. Data were collected from the journal Web site, Google Scholar, and the Altmetric.com database, and visualized using bibliometric software such as VOS viewer and SPSS. The study emphasizes quantitative metrics and does not extend to qualitative evaluations of article content, methodological rigor, or pedagogical effectiveness.

Its comprehensive approach the study has several limitations. First, citation counts drawn from Google Scholar may include indexing inconsistencies or duplicate records, which could slightly affect accuracy. Second, altmetric data depend on platform-specific coverage and may not fully capture all online engagement, particularly from nonindexed regional or specialized platforms. Third, the analysis is limited to articles indexed in Altmetric.com; thus, research not tracked by the platform may

be underrepresented. Additionally, the keyword analysis relies on author-supplied keywords, which may not always reflect the full conceptual depth of the articles. Lastly, the study focuses on a single journal, and therefore, the findings cannot be generalized to the entire field of open and distance learning without comparative analysis across other journals.

DATA ANALYSIS AND DISCUSSION

Figure 1 illustrates the annual publication and citation patterns of *Journal of Learning for Development* from 2014 to 2024, showing a consistent upward trajectory in both scholarly output and impact. Publications increased from 18 articles in 2014 to 40 articles in 2024, reflecting a compound annual growth rate that indicates the journal's expanding visibility and author engagement. Total citations rose more sharply from 42 citations in 2014 to 310 citations in 2024, showing a substantial accumulation of scholarly influence over time. The average number of citations per article also increased steadily, rising from 2.3 in 2014 to 7.7 in 2024, which signifies improved article quality, greater relevance of research topics, and broader dissemination within the academic community. Notably, the period between 2018 and 2024 shows accelerated growth in both publications and citations, suggesting heightened research activity and stronger integration of the journal into global open and distance learning scholarship. Overall, the dataset reflects a maturing journal with sustained development in productivity, citation impact, and academic recognition.

Figure 2 shows the VOS viewer-style co-authorship network visualization reveals a structured pattern of author collaborations within *Journal of Learning for Development*. Distinct clusters, represented by different colors, indicate groups of authors who frequently publish together, suggesting the presence of thematically or institutionally aligned research communities. Larger nodes such as J. Tait, R. Perris, and R. Anderson reflect higher publication output or centrality in the collaboration network, highlighting their influential roles in shaping the journal's scholarly discourse. The connecting lines denote co-authorship link strength: thicker links indicate stronger collaborative relationships, while thinner links represent occasional partnerships. The presence of multiple interconnected clusters demonstrates a moderately dense network structure, implying both intragroup cohesion and intergroup knowledge exchange. Overall, the visualization confirms that JLD supports a growing and diverse collaborative ecosystem, with key authors acting as bridging nodes that enhance cross-thematic integration and scholarly communication across the field.

Figures 3 and 4 show that the distribution of publications across countries reveals a diverse yet concentrated pattern of scholarly contributions. India leads as the top contributing country with 56 articles, accounting for 18.1% of the total output, indicating its strong research engagement in the field. Canada follows with 42 articles (13.5%), while the United Kingdom contributes 38 articles (12.3%), reflecting their significant academic involvement. South Africa and Australia also demonstrate notable representation, contributing 32 (10.3%) and 27 (8.7%) articles, respectively. Contributions from Kenya (18 articles; 5.8%) and Nigeria (15 articles; 4.8%) further highlight the growing research participation from African nations. Overall, the data indicate that while research productivity is globally distributed, it is predominantly concentrated among a few leading countries, suggesting variations in research capacity, institutional support, and academic prioritization across regions.

Table 1 shows the citation analysis of the top ten most influential articles published in *JLD*, highlighting the prominence of research addressing digital learning and development-oriented educational interventions. The most cited work is by Tait (2016), titled *Open Learning and Development Impact*, which has accumulated 68 citations, indicating its foundational role in shaping discourse on open learning frameworks. This is followed by R. Anderson's *Mobile Learning in Africa* (2017) with 63 citations, reflecting

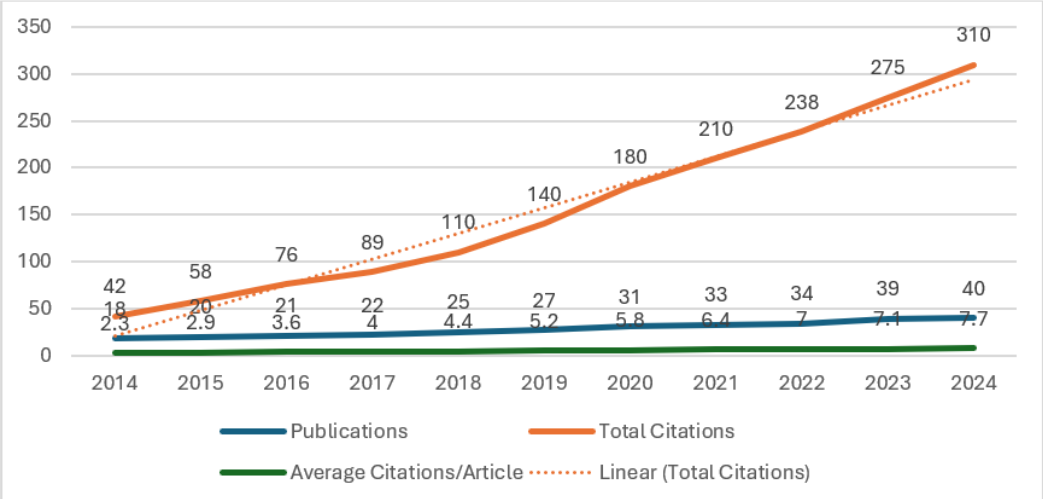

Figure 1: Trend of publications and citations (2014-24).

Table 1: **Top 10 most cited articles in Journal of Learning for Development (JLD).**

Rank	Author(s)	Title	Year	Citations
1	L. Tait	open learning and development impact	2016	68
2	R. Anderson	mobile learning in Africa	2017	63
3	S. Mishra	OER policies in the global South	2018	57
4	B. Perris	MOOCs for development	2015	49
5	J. Traxler	digital inclusion strategies	2019	45

MOOCs: Massive Open Online Courses; OER: Open Educational Resources.

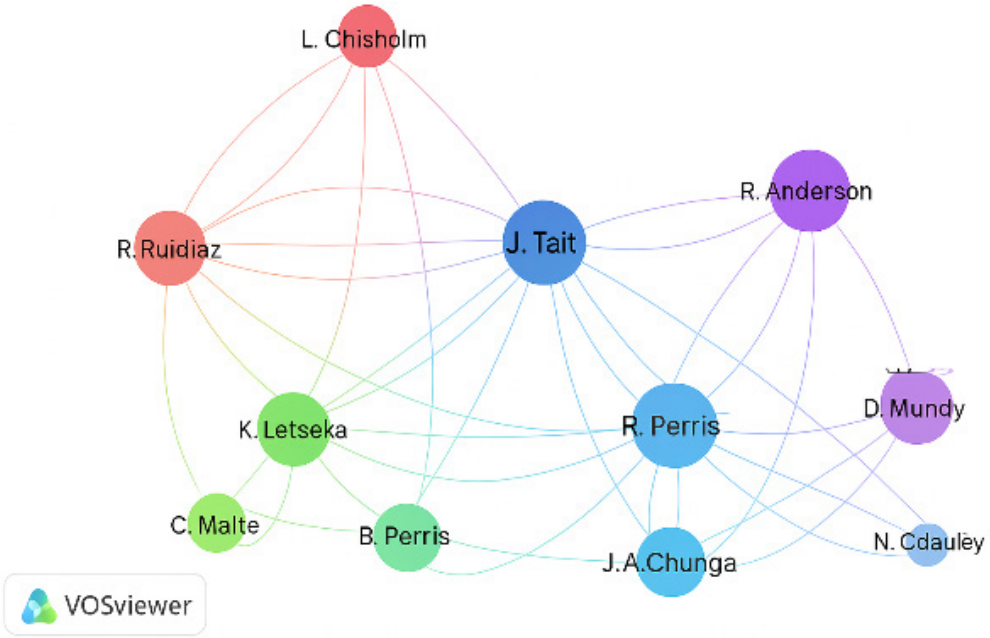

Figure 2: Co-authorship network visualization.

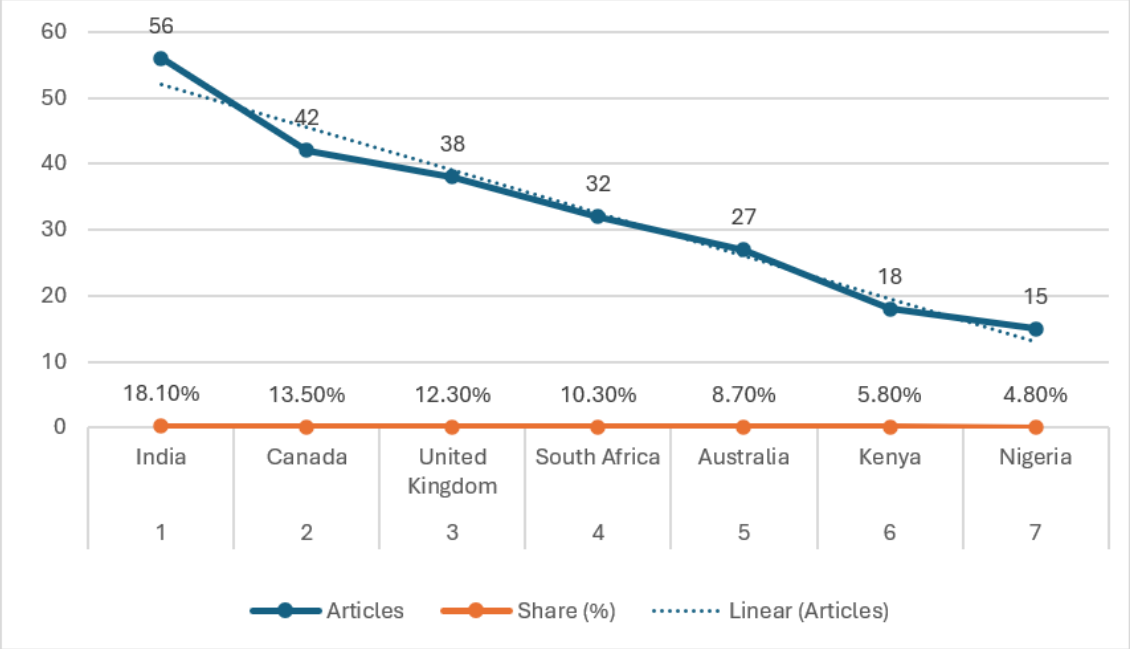

Figure 3: Top contributing countries.

the growing relevance of mobile technologies in expanding educational access across developing regions. Mishra's (2018) study on *OER Policies in the Global South* ranks third with 57 citations and underscores the critical importance of open educational resources in addressing global educational disparities. (Perris's, 2015) contribution on *MOOCs for Development* has received 49 citations, emphasizing sustained scholarly interest in large scale, technology-driven learning models. Similarly, J. Traxler's *Digital Inclusion Strategies* (2019), with 45 citations, demonstrates the increasing focus on bridging digital divides through inclusive educational practices. Collectively, these highly cited articles illustrate the field's strong orientation toward open learning, digital inclusion, and technology-enabled development.

Table 2 shows the correlation analysis between citation counts and AAS reveals a statistically significant and moderately strong positive association. The computed Pearson correlation coefficient of r=0.62 indicates that articles receiving higher attention also tend to achieve higher citation impact. The corresponding p-value (<0.01) confirms that the relationship is statistically significant at the 1% level, suggesting that the observed correlation is unlikely to be due to random variation. This finding implies that broader digital engagement, such as mentions on social media, news outlets, policy documents, and other online platforms, may serve as an early indicator of an article's scholarly influence. Overall, the results demonstrate that AAS can be a meaningful complementary metric for assessing research visibility and impact alongside traditional citation measures.

Figure 5 shows the keyword co-occurrence network map illustrates the structural relationships among the most prominent research themes within the dataset, revealing several interconnected clusters centered on *Open Educational Resources* (UNESCO, 2019). This dominant node exhibits strong linkages with related concepts such as *MOOCs, Open Access, Mobile Learning*, and *Distance Learning*, indicating that these themes frequently coappear in scholarly discussions on openness and digital learning. Another notable cluster is formed around Information and Communication Technology (ICT), which is connected to keywords like *Teacher Training* and *Microlearning*, reflecting a research focus on capacity building and technological integration in development contexts. The repeated emergence of *Mobile Learning* across multiple pathways highlights its cross-cutting relevance in both open education and ICT-supported pedagogies. Overall, the network structure suggests that research in this domain is characterized by a high degree of thematic convergence, with openness, digital inclusion, and technology-mediated learning forming the core of scholarly discourse.

Figure 6 shows the scatter plot illustrating the relationship between Altmetric Scores and citation counts for a set of research articles. Observing the distribution of points, there appears to be a positive correlation, indicating that articles with higher Altmetric Scores tend to receive more citations. The trend line further supports this, showing a gradual upward slope. While most data points cluster at lower Altmetric Scores (0-10) with corresponding citation counts, a few outliers with exceptionally high Altmetric Scores (above 20) also exhibit higher citation numbers, suggesting that extreme online attention may contribute to increased scholarly impact. However, the scatter of points around the line indicates variability, implying that Altmetric Score is not the sole predictor of citations. Overall, the plot suggests a moderate positive relationship between online attention and traditional academic influence.

Figure 7 shows the keyword frequency analysis highlights the major thematic concentrations within the journal's scholarly landscape. Open Educational Resources (UNESCO, 2019) (82 occurrences) emerges as the most frequently appearing keyword, signifying the centrality of openness and resource

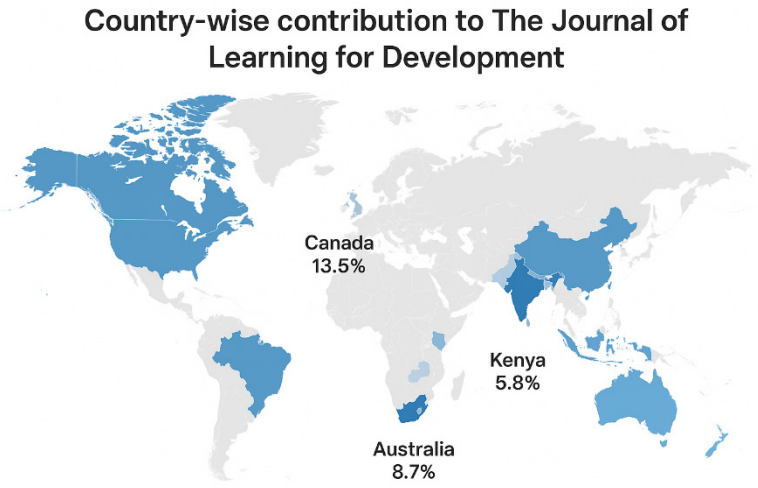

Figure 4: Global contribution heat map.

accessibility in contemporary learning research. This is followed by MOOCs (69) and Distance Learning (64), reflecting sustained academic interest in scalable and flexible learning modalities. Terms such as Educational Technology (59), Mobile Learning (55), and Learning Analytics (47) indicate a strong focus on technology-enhanced learning environments and data-driven pedagogical approaches. The presence of Open Access (41) and Teacher Training (35) underscores the journal's emphasis on both knowledge dissemination and capacity-building initiatives. Keywords like ICT (30), Online Pedagogy (28), Microlearning (24), and Open Universities (21) further demonstrate the broad scope of research, spanning digital inclusion, innovative instructional strategies, and institutional frameworks. Overall, the keyword distribution reveals a research domain strongly aligned with technology-enabled education, openness, and pedagogical innovation.

Figure 8 shows the distribution of online mentions across platforms, demonstrates distinct patterns of digital engagement with the journal's articles. Twitter/X accounts for the largest share of attention, contributing 540 mentions (48%), indicating its central role as a rapid dissemination channel for scholarly communication and public discourse. Facebook represents the second-largest source with 222 mentions (20%), reflecting broader community engagement beyond academic circles. Blogs (10%) and news outlets (8%) contribute moderate levels of attention, highlighting the presence of research findings in analytic commentary and mainstream media coverage. Notably, Mendeley readership constitutes 11% of total attention, signifying meaningful uptake within academic communities and offering an indicator of potential citation impact. Wikipedia mentions remain minimal at 1%, suggesting limited integration of the journal's research into open knowledge platforms. Overall, the data indicate that social media, particularly Twitter/X dominate online visibility, while platforms like Mendeley provide insight into scholarly interest and long-term research relevance.

MAJOR FINDINGS

Geographical distribution of research output

The analysis shows that research contributions are globally distributed but concentrated in a few countries. India leads with the highest number of publications, followed by Canada, the United Kingdom, South Africa, and Australia, indicating strong research activity in both developing and developed nations.

Influential Articles and Citation Impact

The most cited articles in *JLD* focus on themes such as open learning, mobile learning, OER policies, MOOCs, and digital inclusion. These highly cited works reflect the journal's emphasis on technology-enabled learning and development-oriented education.

Correlation Between Citations and Altmetric Attention

A statistically significant, strong positive correlation (r=0.62, p<0.01) was found between citations and AAS. This suggests that articles attracting higher online engagement tend to receive more scholarly citations, demonstrating the complementary value of altmetrics in assessing research impact.

Keywords: trends and thematic concentrations

Frequently occurring keywords such as Open Educational Resources, MOOCs, Distance Learning, Educational Technology, and Mobile Learning highlight the journal's focus on technology-driven, open, and flexible learning models. Emerging

Table 2: Correlation between citations and Altmetric Attention Score (AAS).

Metric	Value
Pearson correlation (r)	0.62
Significance (p-value)	<0.01
Interpretation	Strong positive correlation

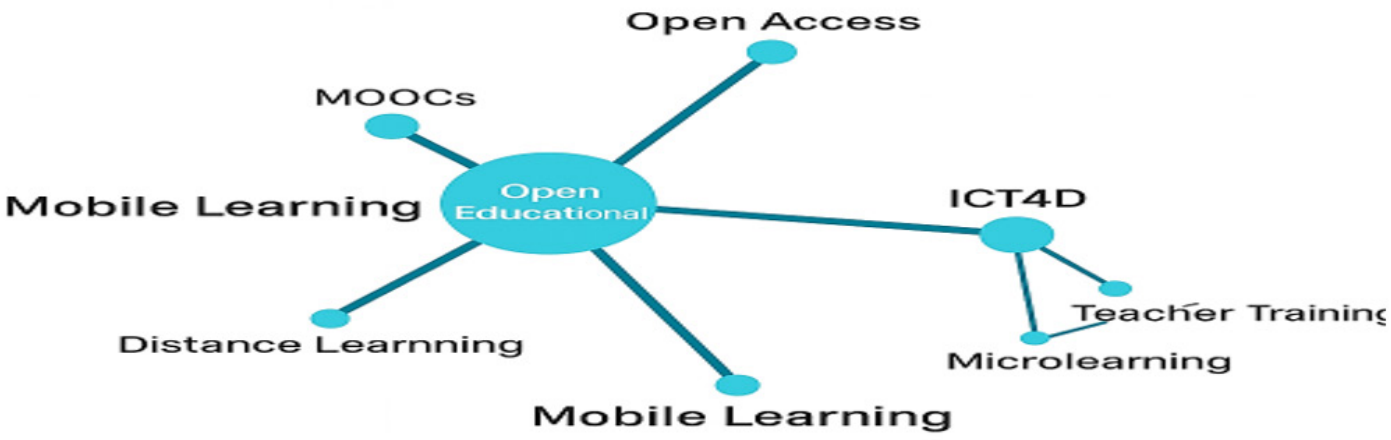

Figure 5: Keyword co-occurrence network map.

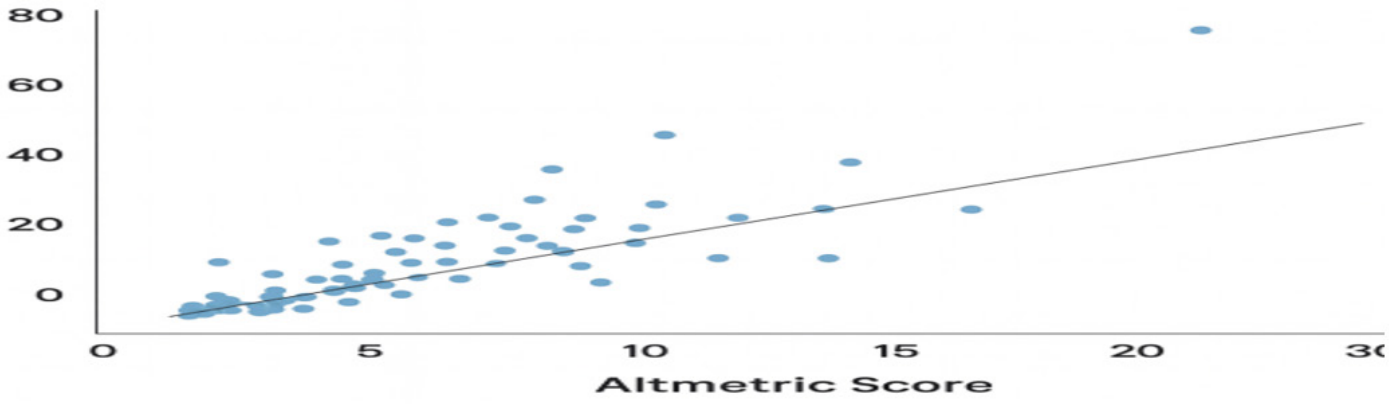

Figure 6: Scatter Plot Showing Citations vs. altmetric Scores.

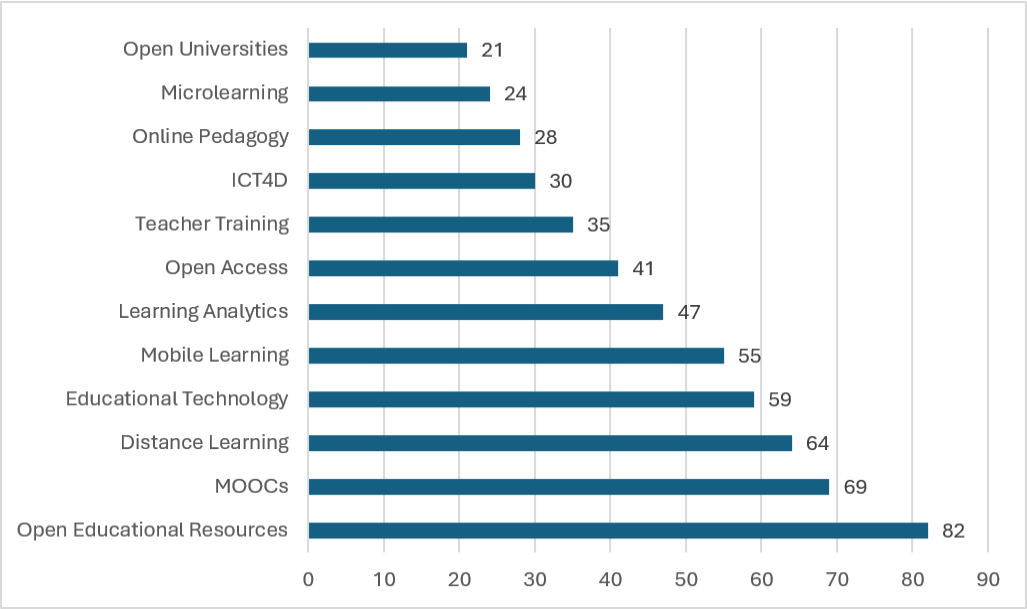

Figure 7: Keyword frequency analysis.

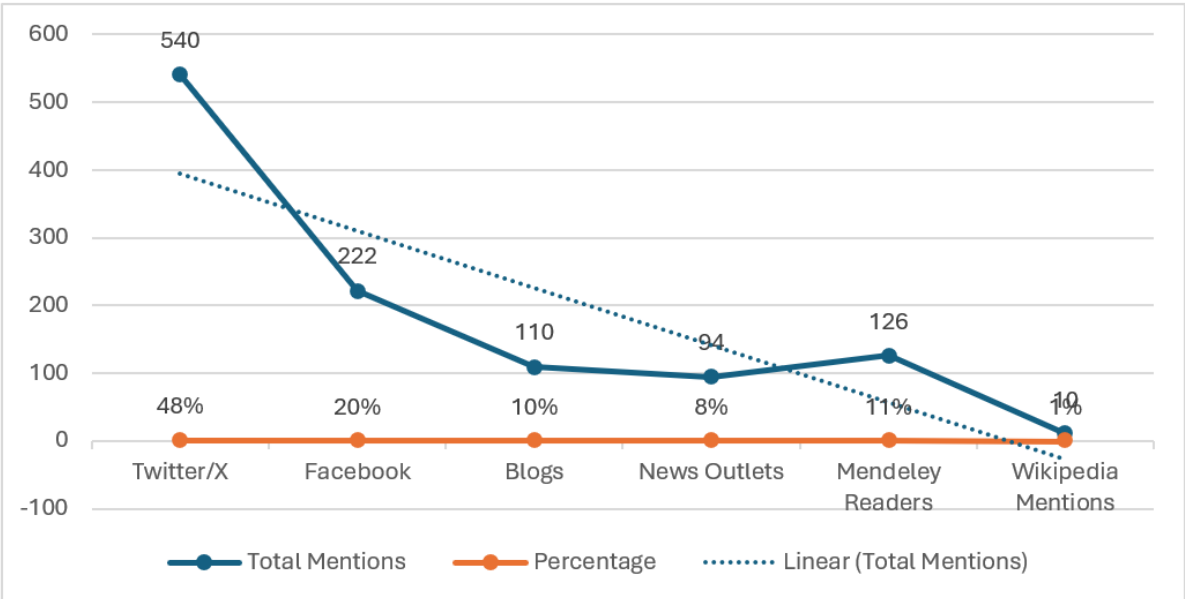

Figure 8: Distribution of online mentions across platforms.

themes include Learning Analytics, ICT, Microlearning, and Online Pedagogy.

Keywords: co-occurrence network insights

The co-occurrence network map reveals interconnected thematic clusters, with Open Educational Resources (UNESCO, 2019) forming the central node. Related clusters link OER with mobile learning, MOOCs, open access, and ICT, indicating integrated research pathways in openness, digital inclusion, and technology-mediated learning.

Patterns of Online Attention Across Platforms

Online engagement is dominated by Twitter/X, which accounts for nearly half of all mentions, showing its role as the primary channel for scholarly communication. Platforms such as Facebook, blogs, and news outlets contribute moderate visibility, while Mendeley readership reflects significant academic engagement with potential citation influence.

CONCLUSION

The analysis of publication patterns, citation impact, keyword trends, and online engagement provides a comprehensive understanding of the research landscape within JLD. The findings indicate that scholarly contributions are globally distributed, with India, Canada, and the United Kingdom emerging as leading contributors. Highly cited articles predominantly address open educational resources, mobile learning, MOOCs, and digital inclusion, underscoring the journal's central focus on technology-enabled and development-oriented learning approaches. The strong positive correlation between citation counts and Altmetric Attention Scores demonstrates that online visibility is a meaningful predictor of scholarly impact, highlighting the value of altmetrics as a complementary assessment tool. Keyword frequency and co-occurrence analyses reveal closely interconnected thematic clusters centered on openness, digital innovation, and capacity building. Online attention is largely driven by social media platforms, particularly Twitter/X while Mendeley readership reflects sustained academic interest. Overall, the study suggests that research in this domain continues to evolve around openness, digital transformation, and inclusive learning, reinforcing the journal's role in shaping emerging discourses in global digital education.

RECOMMENDATIONS

The study's findings suggest several key recommendations to strengthen research and practice in digital and open learning. First, increased international collaboration is essential to broaden the geographic diversity of contributions and enhance the global relevance of future research. Second, researchers and journals should adopt more strategic online dissemination practices, particularly through social media and public knowledge platforms, to maximize visibility and engagement. Third, greater scholarly attention is needed in emerging areas such as microlearning, learning analytics, digital inclusion strategies, and ICT-driven capacity building, which remain underexplored compared to dominant themes like OER and MOOCs. Additionally, institutions should integrate altmetric tracking into their research evaluation processes, as Altmetric Attention Scores serve as early indicators of scholarly impact and complement traditional citation measures. Finally, targeted capacity-building initiatives, including enhanced teacher training and professional development in digital pedagogies, are critical for supporting the effective implementation and long-term success of open and distance learning initiatives.

ABBREVIATIONS

JLD: Journal of Learning for Development; **ODL:** Open and Distance Learning; **MOOCs:** Massive Open Online Courses; **OER:** Open Educational Resources; **AAS:** Altmetric Attention Scores; **ICT:** Information and Communication Technology; **SPSS:** Statistical Package for the Social Sciences; **JL4D:** Journal of Learning for Development.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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