

Pedagogies, Technologies and Mass Cultures: Mapping and Critical Review of the International Literature

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Abstract: The increasing adoption of digital technologies and the influence of mass cultures profoundly transform the educational landscape, raising questions about their implications for pedagogy, learning and cultural identities. This article critically analyses the scholarly literature on the intersection between pedagogies, technologies and mass cultures, focusing on the most relevant academic output indexed in Scopus. The study uses a bibliometric approach, combining quantitative and qualitative analysis. Twenty-one publications were analysed and selected using the keywords 'pedagogy AND technology AND mass culture' applied to title, abstract, and index terms. Interactive bibliometric maps, generated with VOSviewer, made identifying authors, keywords and primary sources possible, highlighting collaborative networks between researchers. The results show that the concepts of teaching and pedagogy dominate the literature, while new topics such as game-based learning and digital inclusion emerge. Furthermore, significant gaps were identified, such as the lack of integration between critical pedagogy and emerging technologies. The study emphasises the potential of digital technologies in redefining educational practices and promoting greater inclusiveness, offering new perspectives for future interdisciplinary developments.

Keywords: epistemology of technology; digital educational practices; bibliometric analysis.

1. Introduction

The integration of digital technologies and the influence of mass cultures have transformed pedagogical practices, learning models and cultural identities. These changes raise relevant theoretical and practical questions involving education, sociology, psychology and media studies (McLuhan, 1964; Giroux, 2003; Storey, 2018).

Information and communication technologies (ICTs) have produced numerous studies on their impact on education, formal and informal learning, and vocational training (Siemens, 2005). Digital media amplify the narrative power of mass cultures, influencing their social meaning but raising critical issues such as the digital divide (Norris, 2001) and algorithmic manipulation (McLaren & Jandric, 2014; Gordon, 2023). These dynamics highlight the risks and opportunities of digital, such as inclusion and the democratisation of knowledge.

In this context, it is essential to explore how pedagogies can utilise the potential of the digital to foster critical and inclusive learning. McLuhan's (1964) and Eco's (1964) studies on the educational role of media prove to be particularly relevant in a changing landscape.

This study critically analyses the development of the international literature on education through a bibliometric approach. The objectives are identifying the main



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research trends, the most relevant contributions, and knowledge gaps. Based on Scopus-indexed sources (Fang, 2012), it combines quantitative and qualitative methods to offer an epistemic view of the field and outline new research perspectives. The ultimate goal is to promote more equitable, inclusive and conscious educational pathways, enhancing the dialogue between pedagogy, technology and culture.

2. Materials and Methods

The study uses a bibliometric approach to analyse scientific publications on the intersection of pedagogy, technology and mass cultures, mapping emerging trends, knowledge gaps and relevant theoretical contributions. Based on Scopus-indexed sources, the analysis considers 21 publications from 2000 to 2023. The search, guided by the keywords' *pedagogy AND technology AND mass culture*' applied to title, abstract and indexed terms, offers a comprehensive overview of the field.

Combining quantitative and qualitative methods, the survey analysed the temporal distribution of publications, disciplinary trends and geographical spread, highlighting educational, social and technological sciences as the main fields. The typology of publications was also examined, providing a detailed insight into knowledge production and diversification dynamics.

Using the VOSviewer software (Van Eck & Waltman, 2010), interactive maps were generated based on citation networks, author collaborations and keyword co-occurrence. These visualisations identified key contributions and emerging themes, representing the most influential papers with nodes proportional to the number of citations and distinguished by chronology using a colour scale.

The mapping of co-authorship networks highlighted the collaborative dynamics of academic communities, identifying the most active research groups and their connections. The analysis of keywords, represented with nodes sized according to relevance, traced the thematic evolution, distinguishing established topics from emerging areas. In addition, the influence of key bibliographic sources was assessed, and journals, volumes, and conference proceedings were identified as having the most significant impact.

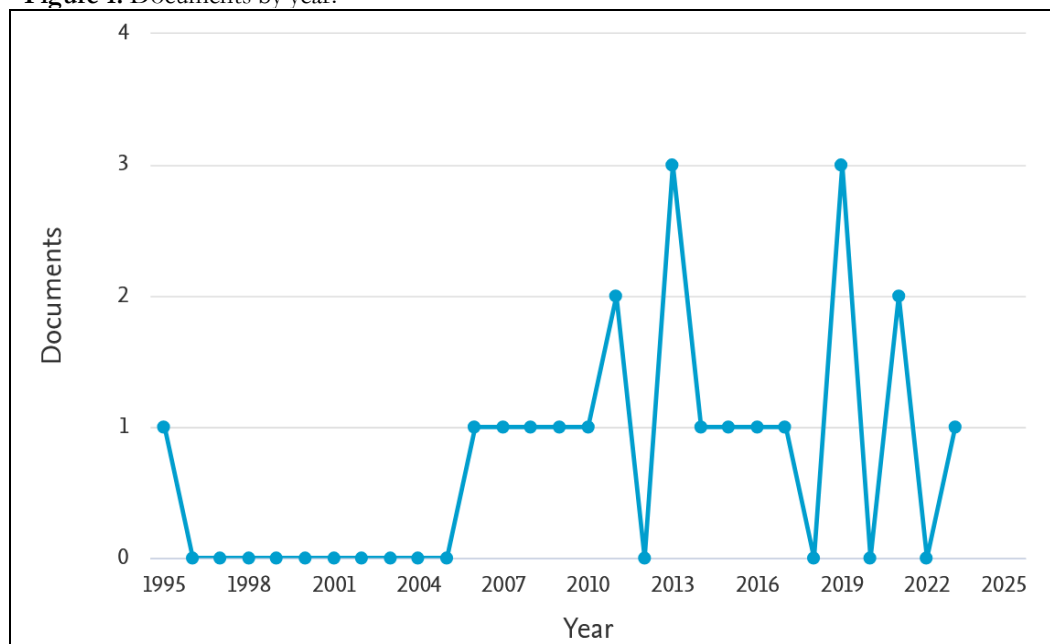
This methodology offered a detailed insight into the evolution of the scientific debate, highlighting significant contributions, strategic collaborations and new research perspectives, providing a solid basis for future developments in the field.

3. Results

3.1. Scopus publications: an overview

The graph of papers published on Scopus between 1995 and 2023 (Figure 1) shows an uneven trend, with alternating periods of stagnation and significant peaks.

Figure 1. Documents by year.

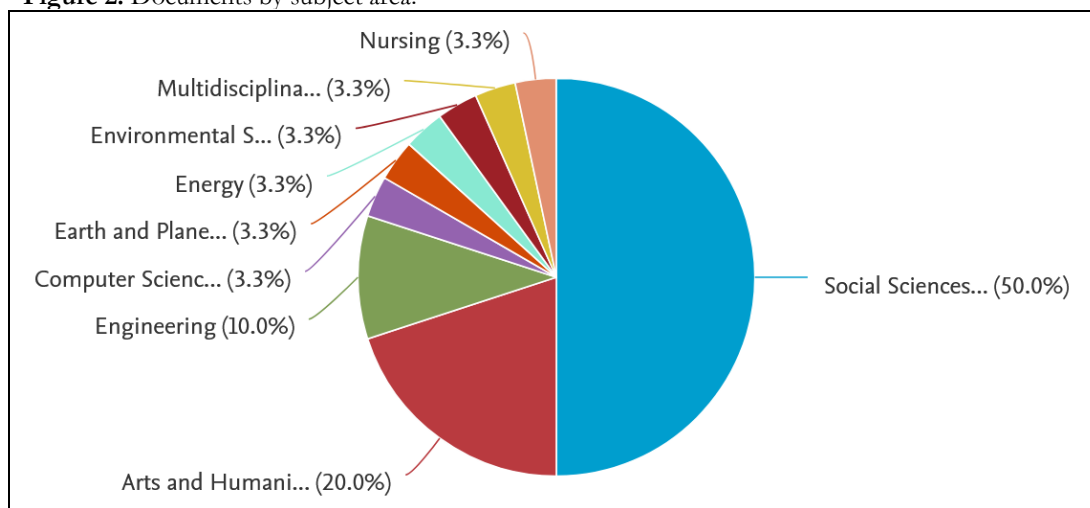


Source: Scopus.

After a long period of absence between 1996 and 2004, production slowly resumed in 2005, reaching an initial peak in 2013. A stagnation phase follows, interrupted by an increase in 2019, probably linked to academic events or renewed interest. In subsequent years, activity remains limited, with an average of one or two papers per year. This pattern reflects dynamics influenced by key papers or strategic collaborations, suggesting the need for further qualitative analysis to understand the fluctuations and foster the development of the field.

The pie chart (Figure 2) illustrates the percentage distribution of scientific contributions by subject area.

Figure 2. Documents by subject area.

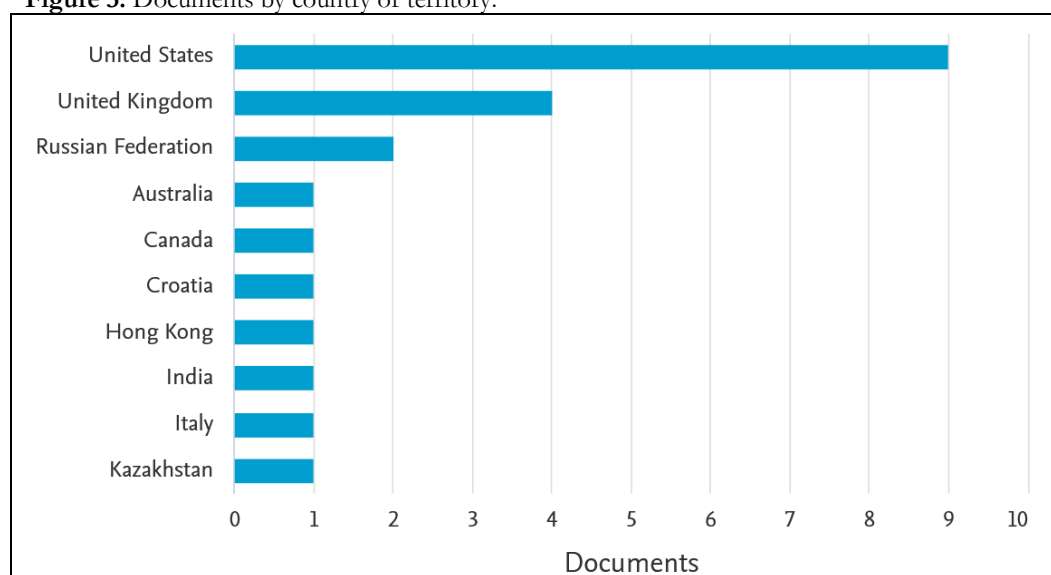


Source: Scopus.

The Social Sciences account for 50% of the overall production, highlighting their centrality. This is followed by the Arts and Humanities (20%), which is concerned with critical analyses of cultural and media phenomena, and Engineering (10%), which contributes to integrating educational technologies. Minor fields such as Environmental Sciences, Computer Science, Energy, Earth Sciences and Nursing (3.3% each) bring significant elements to a multidisciplinary theme. This variety demonstrates the importance of collaborative approaches for a more comprehensive and innovative understanding of the dynamics analysed.

The graph (Figure 3) shows the geographical distribution of scientific production.

Figure 3. Documents by country or territory.

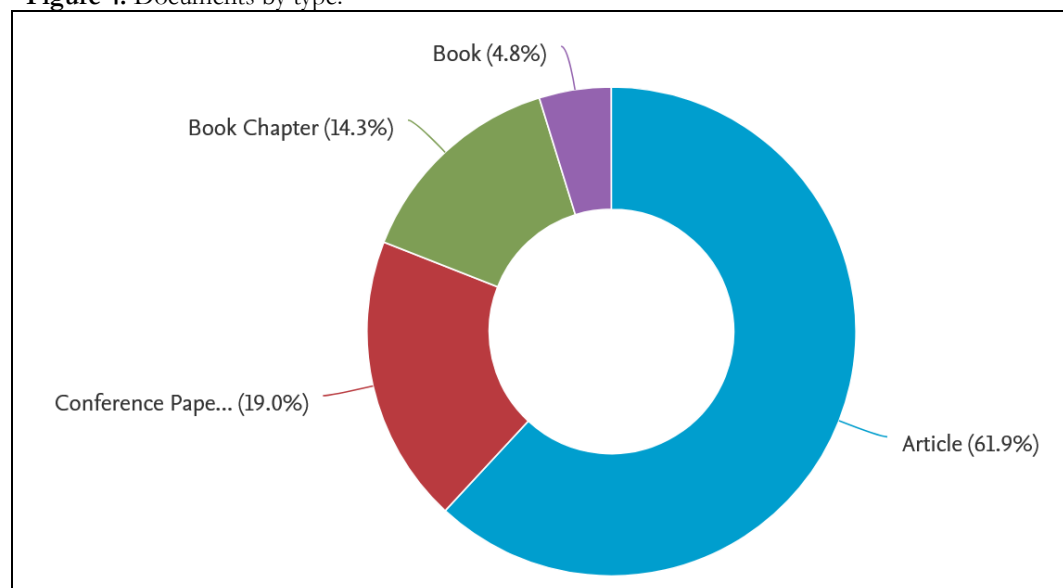


Source: Scopus.

The United States dominates academic production at the intersection of pedagogies, technologies, and mass cultures, with almost 10 papers, followed by the United Kingdom (around 6) and the Russian Federation (less than 3). Other countries, including Australia, Canada, Croatia, Hong Kong, India, Italy and Kazakhstan, contribute 1-2 publications each. The figures reflect a significant gap in commitment and resources devoted.

The doughnut graph (Figure 4) represents the percentage distribution of different academic publications.

Figure 4. Documents by type.



Source: Scopus.

Scientific production is dominated by articles (61.9% of the total), which remain the preferred medium for the rapid and authoritative dissemination of results through peer-reviewed journals. This is followed by conference proceedings (19%), essential for presenting preliminary or specialised studies to a targeted audience. With 14.3%, book chapters testify to an interest in thematic, in-depth studies and scholarly collaborations in collective volumes, while books, though constituting only 4.8%, maintain an essential role for systematic and in-depth analyses. This distribution highlights the preference for quick and accessible formats, balancing speed and depth.

3.2. Bibliometric mapping

Table 1 shows the most cited documents, highlighting the relevance and impact of the publications in the analysed field.

Table1. I documenti più citati		
id	Document	Citations
1	Maida (2011)	29
2	Liscutin (2009)	22
3	Mclaren (2014)	22
4	Allsop (2013)	21
5	Petit dit Dariel (2010)	16
6	Kern (2011)	10
7	Squire (2013)	8
8	Aneja (2017)	7
9	Li (2015)	5
10	Bonus (2016)	3
11	Rubio (2008)	3

12	Jarc (2019)	2
13	Kaufmann-Buhler (2019)	2
14	Wahid (2019)	1
15	Anzorova (2021)	1
16	Gonzalez-Stephan (2007)	1
17	Gordon (2023)	0
18	Kirillova (2013)	0
19	Moses (2021)	0
20	Syed-Khuzzan (2006)	0
21	Cohen (1995)	0

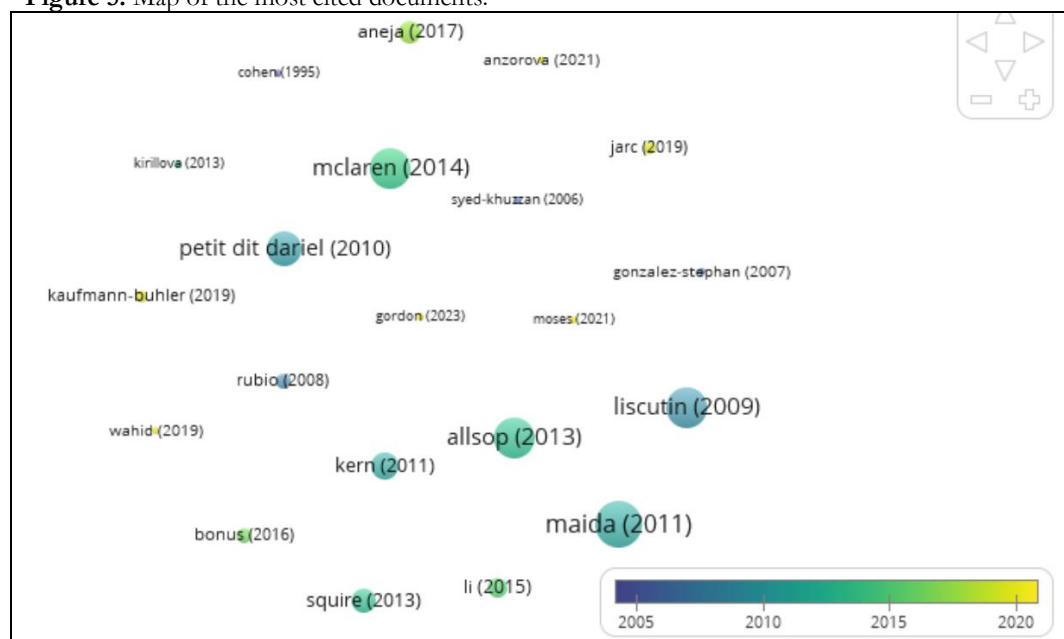
Source, Elaborazione VOSWiever

The citation analysis reveals an academic concentration on a few key papers: Maida (2011) dominates with 29 citations, followed by Liscutin (2009) and McLaren (2014) with 22 each. Allsop (2013) and Petit dit Dariel (2010) remain authoritative, with 21 and 16 citations. Moderately cited studies, such as Kern (2011) with 10 and Squire (2013) with 8, influence specific domains, while smaller contributions, such as Rubio (2008) and Jarc (2019), sit in niches or emerge. Recent publications, such as Gordon (2023) and Kirillova (2013), have yet to establish themselves.

Citations focus on a few, often dated, papers that are integrated into the scientific debate.

Figure 5 illustrates the temporal evolution and impact of research output.

Figure 5. Map of the most cited documents.



Source. VOSWiever elaboration.

The map shows the distribution and temporal impact of the papers, with circles proportional to citations and colours from blue (dated works) to yellow (recent). Key

studies such as Maida (2011) and Liscutin (2009) stand out in the centre, followed by McLaren (2014), Allsop (2013) and Petit dit Dariel (2010).

Less cited papers, such as Aneja (2017) and Kirillova (2013), occupy the top of the map, while recent contributions, such as Gordon (2023) and Moses (2021), in yellow, need time to accumulate citations. The temporal analysis shows that works from 2010-2020 have had more impact, while those prior to 2010 show variability. Recent contributions, while promising, require further analysis.

The figure highlights the importance of time for the accumulation of citations and the prominence of papers in an intermediate time window.

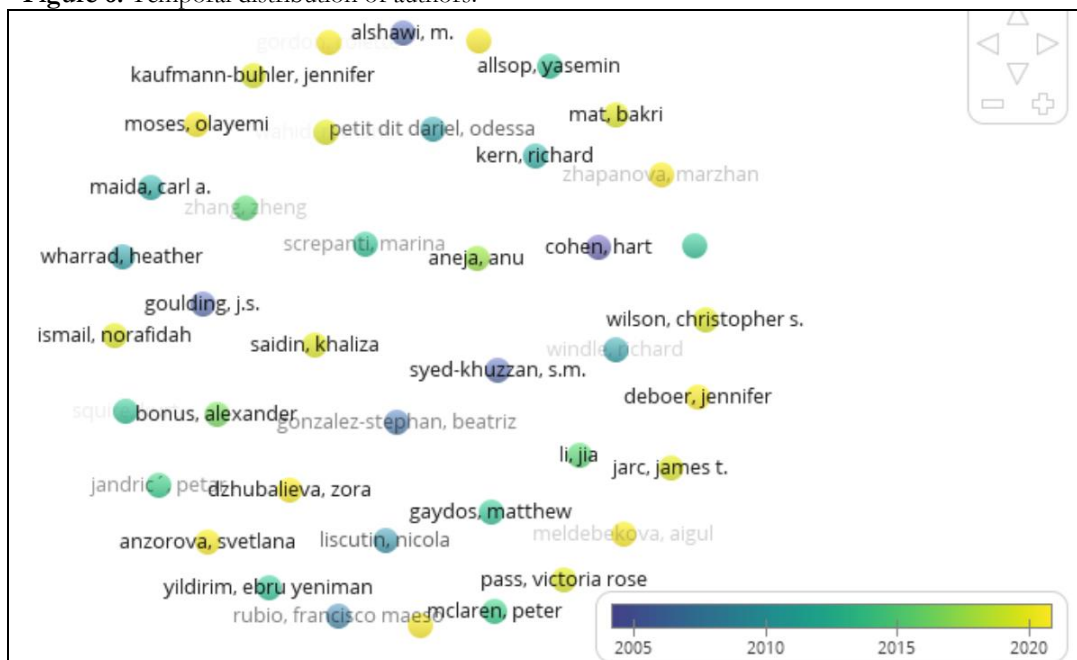
Table 2 lists the 18 most cited authors out of the 41, each of whom published only one paper.

Table 2. Most cited authors		
Id	Author	Citations
1	Maida, Carl A.	29
2	Jandric', Petar	22
3	Liscutin, Nicola	22
4	McLaren, Peter	22
5	Allsop, Yasemin	21
6	Screpanti, Marina	21
7	Yildirim, Ebru Yeniman	21
8	Petit Dit Dariel, Odessa	16
9	Wharrad, Heather	16
10	Windle, Richard	16
11	Kern, Richard	10
12	Gaydos, Matthew	8
13	Squire, Kurt	8
14	Aneja, Anu	7
15	Li, Jia	5
16	Zhang, Zheng	5
17	Bonus, Alexander	3
18	Rubio, Francisco Maeso	3
<i>Source. VOSWiever elaboration.</i>		

Carl A. Maida leads with 29 citations, followed by Petar Jandric', Nicola Liscutin and Peter McLaren, with 22 each. Yasemin Allsop, Marina Screpanti and Ebru Yeniman Yildirim follow with 21 citations, while Odessa Petit Dariel, Heather Wharrad and Richard Windle count 16. Richard Kern (10) and Matthew Gaydos (8) stand out in specific areas. Anu Aneja (7), Jia Li and Zheng Zhang (5) occupy marginal positions, followed by Alexander Bonus and Francisco Maeso Rubio (3). Other authors have not yet been cited, probably due to the recent publication of their works. Citations are concentrated on a few key authors, while the least cited represent emerging or niche research with future potential.

Figure 6 shows the temporal distribution of authors' academic activity with a colour gradient: from blue for early years (2005) to yellow for more recent contributions (2020).

Figure 6. Temporal distribution of authors.

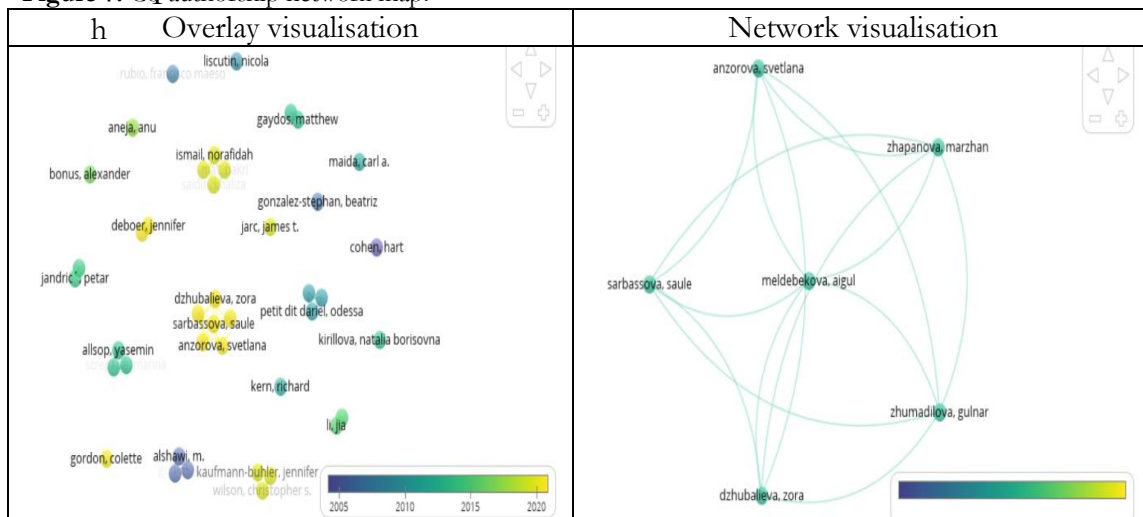


Source. VOSWiever elaboration.

The map shows a varied time distribution, combining established contributions and new perspectives. The colour gradient reflects continuous and innovative scientific production, from blue (dated publications) to yellow (recent).

Figure 7 represents co-authorship networks with Overlay and Network Visualization, showing author collaborations from 2005 to 2020.

Figure 7. Co-authorship network map.



Source. VOSWiever elaboration.

etwork visualisations show a dynamic and diverse academic landscape.

The *Overlay Visualisation* uses a colour scale: green-yellow for recent authors and blue for dated contributions. The map highlights collaborative clusters and isolated nodes, indicative of sporadic contributions. The size of the nodes highlights key scholars as connectors between research groups. In recent years, there has been an increase in collaborations and the emergence of new perspectives.

Network Visualisation highlights close relationships with cohesive clusters, such as Anzorova Svetlana, Meldebekova Aigul and Dzhubaeva Zora, representing academic communities on common themes. The colour gradient signals the growth of interactions and the exploration of new research areas.

The maps reveal established networks alongside expanding clusters. Integrated clusters reflect active interdisciplinary communities, while isolated nodes indicate residual fragmentation. These patterns offer insights into the evolution of collaborations and the consolidation of key topics.

Table 3 lists 35 of the 132 most frequent keywords, ordered by occurrences and overall strength of connections in the bibliometric network.

Table 3. Most cited keywords.

id	Keyword	Occurrences	Total link strength
1	Teaching	2	44
2	Pedagogy	2	32
3	Research	2	32
4	personnel training	2	28
5	Media	2	14
6	Article	1	30
7	attitude of health personnel	1	30
8	attitude to computers	1	30
9	computer-assisted instruction	1	30
10	data collection	1	30
11	diffusion of innovation	1	30
12	education, nursing, baccalaureate	1	30
13	factor analysis, statistical	1	30
14	factorial analysis	1	30
15	faculty, nursing	1	30
16	health personnel attitude	1	30
17	Human	1	30
18	Humans	1	30
19	information processing	1	30
20	mass communication	1	30
21	Methodology	1	30
22	MIcs	1	30
23	Mlown	1	30
24	nursing education	1	30
25	nursing methodology research	1	30

26	Organisation	1	30
27	organisation and management	1	30
28	organisational culture	1	30
29	personality test	1	30
30	principal component analysis	1	30
31	psychological aspect	1	30
32	q-sort	1	30
33	qualitative research	1	30
34	research design	1	30
35	Workplace	1	30

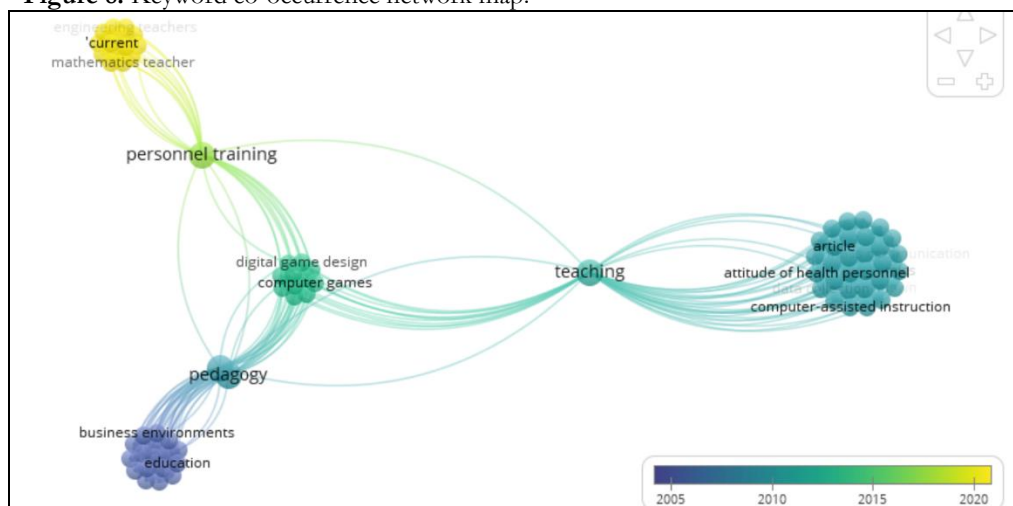
Source. VOSWiever elaboration.

The analysis of the keywords shows central thematic cores such as *teaching*, *pedagogy*, *research* and *personnel training* with high interconnection (total link strength of 44, 32 and 28), underlining their transversal relevance. Single terms like *article*, *qualitative research* and *computer-assisted instruction* show significant link strength (30), connecting different subject areas.

Keywords with moderate connections, such as *information and communication technologies*, *game-based learning* and *sustainable development*, indicate emerging themes, while less recurring concepts, such as *collaborative learning* and *feminist pedagogy*, represent developing research areas. This configuration shows a bibliometric structure dominated by a few central terms, with strategic sectoral contributions and new opportunities for in-depth study.

The literature focuses on the intersection of pedagogy, technology and education, delving into teaching and research methodologies and innovative topics such as *game-based learning*. Monitoring strategic keywords and emerging niches is crucial for new academic perspectives. The network map (Figure 8) highlights the centrality of concepts such as *teaching* and *pedagogy*, which unite distinct thematic clusters and strengthen the scientific landscape of the field.

Figure 8. Keyword co-occurrence network map.



Source. VOSWiever elaboration.

The bibliometric map shows *teaching* as a central node connecting traditional and innovative educational approaches. Two main clusters emerge: one on *pedagogy*, which explores topics such as *education* and *business environments*, and one on *personnel training*, which integrates innovative concepts such as *digital game design* and *computer games*, highlighting the use of technology in education.

A third cluster, related to the *article*, includes terms such as *computer-assisted instruction* and *attitude of health personnel*, reflecting the interest in technological innovation in educational research, focusing on health contexts. The interconnections between these clusters underline a growing interdisciplinarity, with *game-based learning* combining playful and pedagogical elements, fostering a dialogue between traditional practices and interactive technologies.

The network highlights a central core dominated by *teaching*, flanked by secondary clusters exploring emerging research niches. This landscape reflects an evolving literature in which established themes are intertwined with educational technologies and digital gaming innovations. The analysis of connections between clusters offers insights into the development of interdisciplinary and dynamic approaches in education.

Figure 9 shows the connections between keywords, clearly distinguishing between established thematic cores and emerging concepts.

Figure 9. Keyword co-occurrence.



Source. VOSWiever elaboration.

The bibliometric network highlights *teaching*, *pedagogy* and *personnel training* as pillars of educational research, linked to terms such as *business environments*, *computer games* and *current*, emphasising the relevance of teaching methodologies in professional and technological fields. Alongside this core, a technology cluster emerges, represented by concepts such as *article* and *diffusion of innovation*, reflecting the dialogue between academic research and technological applications.

Terms such as *diversity*, *media* and *blended*, which are less integrated into the core network, highlight emerging areas related to inclusion, media and hybrid learning. Peripheral nodes, such as *collaborative learning* and *effect*, indicate sectoral research with potential for development.

Temporally, established concepts such as *teaching* and *pedagogy* dominate from 2005 to 2020, while recent terms such as *blended* and *diversity* reflect interest in innovative and interdisciplinary approaches. The map represents a network rooted in traditional pedagogical themes, flanked by emerging clusters opening up new perspectives. Monitoring these dynamics may guide the future development of the educational field.

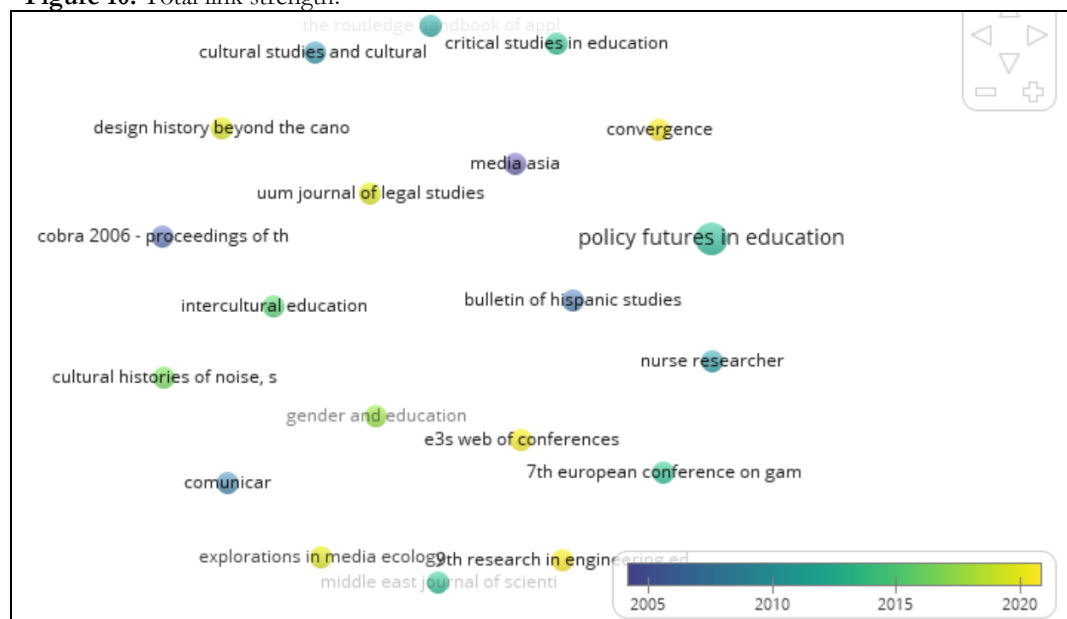
Table 4 lists ten of the twenty sources cited in the literature, while Figure 10 displays the distribution of citations, number of associated papers and *total* link strength in the bibliometric network.

Table 4. Most cited sources (journals, books, conferences, etc.).

id	Source	Documents	Citations
1	Policy futures in education	2	51
2	Cultural studies and cultural industries in northeast Asia: what a difference a region makes	1	22
3	7th European conference on games based learning, ecgbl 2013	1	21
4	Nurse researcher	1	16
5	The Routledge handbook of applied linguistics	1	10
6	Critical studies in education	1	8
7	Gender and education	1	7
8	Intercultural education	1	5
9	Comunicar	1	3
10	Cultural histories of noise, sound and listening in Europe, 1300–1918	1	3

Source. VOSWiever elaboration.

Figure 10. Total link strength.



Source. VOSWier elaboration.

The polarisation between highly cited sources and less impactful publications is evident. *Policy Futures in Education* stands out as the most relevant, with 51 citations to two papers confirming its central role in the educational debate, albeit with limited connections to other sources.

Prominent contributions include *Cultural Studies and Cultural Industries in Northeast Asia* (22 citations) and the *Proceedings of the 7th European Conference on Games-Based Learning* (21 citations), reflecting interest in *game-based learning* and regional perspectives. Specialised sources such as *Nurse Researcher* (16 citations) and *The Routledge Handbook of Applied Linguistics* (10 citations) focus on discipline-specific areas. In comparison, *Critical Studies in Education* (8 citations) and *Gender and Education* (7 citations) address critical issues such as gender pedagogy and innovative educational approaches.

Publications with limited citations, such as *Intercultural Education* (5 citations) and *Comunicar* (3 citations), show an interest in intercultural education and communication but remain marginal. The impact of sources such as *Bulletin of Hispanic Studies* and *Media Asia*, with only one citation, is negligible, given the absence of significant links in the bibliographic network.

The landscape appears fragmented, with little interdisciplinary and thematic cohesion. Strengthening the connections between established and emerging sources could fill gaps and promote a more integrated and innovative scientific corpus.

4. Discussion and Conclusion: the main themes of the prevailing bibliography

The literature review outlines a changing educational landscape where pedagogy, technology and culture converge in a critical and interdisciplinary perspective. Critical pedagogy and media education emerge as key approaches, exploiting media such as television, film and the Internet to form cultural identities and promote social awareness. The critical use of these tools develops analytical skills and educational

values, while technological innovation redefines the role of teachers in digital and hybrid environments.

Among the main themes, game-based learning introduces video games as tools for educational engagement but requires trained teachers and flexible curricula. At the same time, the importance of preserving 'deep reading' in the digital age is emphasised to maintain critical and narrative skills. Visual pedagogy and screen aesthetics renew socialisation and cultural education, while transnational technologies such as Web 2.0 facilitate authentic intercultural experiences.

In healthcare, digital technologies enhance professional and clinical learning through simulations and interactive platforms, responding to the needs of a changing field. Reflections on informal education and sustainability highlight the need to balance intellectual property and knowledge access, mitigating algorithmic control risks and promoting informed citizenship.

The teacher, a central figure, requires continuous training and updated curricula to integrate emerging technologies and ensure inclusivity. Media pedagogy is essential to decode media symbols, while personalised learning environments respond to specific student needs.

Digital technologies are tools and cultural environments that shape learning and social interactions. They offer unique opportunities, such as personalised pathways and global access to resources, but entail risks of inequality and control over data. A critical and inclusive approach, rooted in universal educational values, is fundamental to balancing technological progress and social justice, promoting sustainable models and active and aware citizenship.

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