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Review Article

Agentic AI-driven creative media management in mass communication Education 5.0: A PRISMA-guided mixed-methods systematic review and bibliometric analysis

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ABSTRACT

Education 5.0 is driving a paradigmatic shift toward human-centered, artificial intelligence (AI)-enabled learning ecologies in which Agentic AI autonomously orchestrates creative media production, content management, and instructional design. This study offers a mixed-methods systematic review of Agentic AI-driven creative media management in mass communication education, integrating bibliometric and qualitative evidence to address the current fragmentation of the field. Drawing on Scopus and Web of Science, the review combines bibliometric analysis using VOSviewer and Bibliometrix to map intellectual structures, collaboration networks, and thematic clusters, with inductive content analysis to synthesize strategic management dimensions, core components, and tools deployed in practice. The results reveal dominant thematic clusters, highly influential authors and sources, and evolving keyword trajectories that collectively delineate the research landscape of Agentic AI in Education 5.0. Content-level synthesis identifies key functional roles of Agentic AI in resource optimization, personalized content delivery, and autonomous workflow orchestration, while also cataloguing

the specific platforms and architectures used. The review culminates in a comprehensive knowledge map that links macro-level research patterns with micro-level design features, and it foregrounds critical research gaps around AI governance, ethical frameworks, and contextual implementation. These insights provide a foundation for future scholarly work and offer actionable guidance for educational leaders and media managers seeking to responsibly integrate Agentic AI into creative media communication management.

Keywords: agentic artificial intelligence, creative media management, mass communication education, Education 5.0, systematic review

INTRODUCTION

Education in the 21st century is undergoing a profound paradigm shift driven by artificial intelligence (AI), accelerating the transition from Education 4.0 toward Education 5.0 models that emphasize human-AI collaboration and deeply personalized learning experiences. In this emerging landscape, AI no longer functions solely as a reactive, generative "assistant" but is increasingly instantiated as agentic AI—autonomous systems that can perceive their environment, infer goals, plan multi-step actions, and adapt dynamically to complex contexts with minimal human oversight. This evolution is reshaping how knowledge is produced, mediated, and governed in higher education and media-rich learning environments, raising urgent questions for scholars and practitioners about the future of curriculum, assessment, and professional practice in AI-enabled universities.

Within this shift, the field of mass communication education faces a particularly strategic challenge because it depends on the design, production, management, and distribution of complex, rapidly evolving media content as a core pedagogical and professional competency. Education 5.0 frameworks demand that schools of journalism, media, and communication move beyond merely "teaching about" AI tools to structurally integrating them into learning design, newsroom simulations, and media production pipelines in ways that remain ethically and professionally robust. As agentic AI systems become capable of autonomously generating storyboards, adapting campaigns, orchestrating workflows, and optimizing audience engagement, mass communication programs must reconsider how to sustain competitive relevance and graduate students who can critically lead, rather than passively follow, AI-mediated creative industries (Hacek, 2025).

These pressures are most visible in the domain of creative media management inside educational institutions, where traditional infrastructures such as digital asset management systems and learning management systems were architected for relatively static, human-authored content rather than for interaction with autonomous agents that can create, revise, and disseminate media on scale. Existing governance frameworks struggle to address bottlenecks in content servicing, opaque quality-assurance processes, and emergent ethical and copyright risks associated with AI-generated and co-generated media, particularly when outputs are continuously updated or remixed by multiple agents. Consequently, institutions lack mature operational models for orchestrating human-AI workflows in creative media labs, classrooms, and online platforms while simultaneously safeguarding transparency, accountability, and intellectual-property integrity (Limpinan et al., 2025).

Although Agentic AI is widely framed as a promising solution for automating and augmenting creative media pipelines—acting as an autonomous co-creator, project manager, or orchestration layer for multimodal content—current knowledge about its deployment in educational contexts remains fragmented across disparate case studies, technical reports, and conceptual discussions. Recent work on Agentic AI in education and AI-driven creative media highlights potential benefits in personalization, workflow optimization, and new forms of artistic expression, yet offers little systematic synthesis of who is experimenting with these systems, which tools and architectures are employed, and what pedagogical or organizational outcomes are being reported. As a result, academic leaders, instructional designers, and media-services units lack an evidence-informed "map" to guide decisions about when and how to integrate Agentic AI into creative media management, how to benchmark tools, and how to frame governance and policy at the level of programs and institutions. This study is, to our knowledge, the first mixed-methods systematic review that explicitly focuses on Agentic AI-driven creative media management in mass communication Education 5.0, combining the preferred reporting items for systematic reviews and meta-analyses (PRISMA)-guided screening, bibliometric science mapping (VOSviewer and Bibliometrix), and

inductive content analysis. By bridging fragmented technical, educational, and media-management literatures, it offers an original, cross-disciplinary synthesis that has been absent from prior AI-in-education reviews.

Our review asks to address this gap, the present mixed-methods study undertakes a systematic literature review (SLR) and bibliometric analysis of research on Agentic AI-driven creative media management within the broader landscape of Education 5.0 and mass communication education. Building on established bibliometric approaches in AI-and-media scholarship, the study analyses publication outputs, performance and structural patterns, thematic clusters, and keyword evolution to characterize the research ecosystem across authors, institutions, journals, and dominant methodological traditions. Specifically, it seeks to

(a) describe the content features and methodological quality of empirical and conceptual work on Agentic AI in creative media management,

(b) map the performance and structure of the field through bibliometric indicators,

(c) identify thematic clusters, tools, and core components that underpin current implementations, and

(d) surface research gaps and future directions that can inform the strategic integration of Agentic AI into mass communication curricula and media-service operations in Education 5.0 institutions.

LITERATURE REVIEW

Agentic AI

Agentic AI represents a qualitative shift from reactive or purely generative systems toward autonomous, goal-directed agents that can perceive their environment, reason about alternative courses of action, and execute multi-step plans with limited human supervision. In contrast to traditional and generative AI (GenAI), which typically respond to explicit prompts or follow pre-defined rules, agentic systems integrate perception, cognitive/reasoning, and action modules in a continuous "sense-plan-act" loop that allows them to adapt to feedback, learn from experience, and reconfigure their strategies in real time. This architectural shift enables AI agents not only to generate output but also to manage tasks, invoke external tools, coordinate with other agents, and pursue complex objectives across dynamic socio-technical environments such as classrooms, media platforms, and organizational workflows. A growing body of work in educational technology conceptualizes Agentic AI as the next stage after intelligent tutoring and learning-analytics systems, emphasizing its capacity for independent, dynamic, and adaptive behavior in support of personalized learning and institutional operations. In this literature, agentic systems are described as memory-rich tutors, co-teachers, and campus-wide assistants that can monitor learner progress over extended periods, anticipate emerging needs, scaffold self-regulation, and orchestrate interventions without continuous human prompting. Empirical studies on pedagogical and generative agents show that when these systems provide timely, personalized guidance and scaffolding, they can enhance learners' sense of social presence, reduce cognitive load, and improve comprehension—effects that align with social agency theory and suggest that well-designed Agentic AI may function as a socially meaningful partner rather than a mere tool (H. Li et al., 2025; Yan, 2025). At the same time, critical analyses caution that the autonomy and orchestration power of Agentic AI raise substantial design, governance, and ethical challenges, particularly in data-intensive domains such as media and mass communication education. Because these systems can set sub-goals, call external services, and act across platforms, they introduce new risks around opacity, biased or misaligned decision-making, over-automation of pedagogical and editorial labor, and blurred responsibility when agentic workflows fail or cause harm. Recent frameworks for Agentic AI in education therefore argue that agentic systems must be embedded in transparent, human-centered governance models that preserve teacher and learner agency, make decision processes inspectable, and explicitly delimit which forms of planning and action should remain under human control. From a research perspective, the literature remains fragmented, with technical contributions focusing on architectures and modules, and educational studies emphasizing pedagogical affordances, while relatively few works integrate these perspectives into coherent design principles for real-world learning ecologies. Conceptual and practitioner reports frequently portray Agentic AI as a co-creator or workflow orchestrator capable of managing end-to-end processes, yet empirical implementations often resemble advanced generative assistants that lack robust perception, long-term

memory, or genuine multi-agent coordination. This gap underlines the need for interdisciplinary research that links technical capabilities with learning theory, organizational change, and media-production practice, so that Agentic AI can be deployed as an accountable, pedagogically grounded partner in human-AI collaboration rather than an opaque "black box" of automation. In simpler terms, Agentic AI refers to AI systems that do not just answer questions but can independently decide what to do next, call tools, and coordinate tasks over time. For example, in a journalism school, an Agentic AI could automatically organize video clips, draft storyboards, and suggest editing sequences for a student news package without being prompted at every step.

Mass Communication Education

Mass communication education in the 21st century is being reshaped by the combined pressures of digitization, phantomization, and AI, leading to deep changes not only in media technologies but in the epistemic foundations, goals, and structures of curricula. Recent reviews of media education and edu-communication show that scholarly interest has evolved from conceptual debates about terminology and critical media literacy (2000-2012) toward a second phase characterized by implementation, training, and intensive digitalization, with growing attention to the Global South, algorithmic literacy, and the ethical self-management of digital identities. This trajectory supports the view that mass communication Education 5.0 must systematically integrate digital competencies, critical thinking, and ethical responsibility with advanced technologies such as AI, data analytics, and immersive media, rather than treating them as optional addons at the margins of traditional journalism or broadcasting curricula (Aguaded et al., 2022). Within this evolving landscape, mass communication programs have become increasingly interdisciplinary, spanning journalism, public relations, broadcasting, digital media, and specialized areas such as development communication, political communication, and health communication. Across these domains, curricula still converge on core communicative processes—sender, message, medium, audience, feedback—while embedding foundational training in communication theory, media research methods, media law and ethics, and multimodal production skills in writing, speaking, audio-visual storytelling, and interactive media design. At the same time, new strands of edu-communication research highlight how mass communication education must address power, identity, and digital citizenship in a globalized, platform-dominated environment, where students are simultaneously content creators, algorithmically profiled audiences, and critical interpreters of networked public discourse (Carias-Pérez et al., 2025; Collado-Alonso et al., 2023). The rapid diffusion of AI—especially GenAI—has intensified these demands by transforming both newsroom practices and media-production workflows, forcing journalism and communication schools to reconsider their pedagogical models and competency frameworks. Lopezosa and colleagues, for example, show that emergent AI-driven news production obliges journalism curricula to cultivate at least three intertwined skill sets: foundational understanding of AI and algorithmic systems, technical proficiency in deploying and controlling AI tools within content-production pipelines, and robust ethical reasoning about automation, transparency, and professional norms. Complementary studies on AI literacy in media education report that mass communication students increasingly use AI tools in their academic and creative work, yet display uneven levels of functional, conceptual, and critical literacy across national and institutional contexts—underscoring the need for structured, curriculum-embedded approaches to AI training rather than ad hoc experimentation (Ali et al., 2026; Blanco et al., 2026). Against this backdrop, mass communication Education 5.0 can be interpreted as both a continuation and a disruption of earlier media-education paradigms: it retains the traditional emphasis on storytelling, verification, and public responsibility, while extending these concerns to algorithmically mediated environments in which human and machine agencies are tightly intertwined. Integrating AI—and particularly more autonomous, Agentic AI systems—into mass communication curricula therefore represents a double challenge: programs must prepare students to collaborate critically and ethically with intelligent technologies as content creators, media managers, and digital citizens, while also ensuring that such technologies do not erode core journalistic values of accountability, transparency, and service to the public interest. Addressing this agenda will require not only new courses and training modules but also sustained research on how AI-mediated pedagogies, newsroom simulations, and creative media labs shape students' professional identities, agency, and capacity to navigate complex media ecologies in Education 5.0. (Assad et al., 2025).

Education 5.0

Education 5.0 is increasingly framed as the fifth wave of educational reform, characterized by a human-centric integration of advanced digital technologies into learner-centered, flexible ecosystems that extend beyond the narrow logic of technology-driven innovation. Rather than positioning technologies such as AI, IoT, or immersive media as ends in themselves, recent conceptual work portrays Education 5.0 as a socio-technical paradigm in which digital transformation becomes an enabling infrastructure for quality, efficiency, and inclusive access to meaningful learning opportunities across diverse learner groups. This perspective emphasizes that the success of Education 5.0 depends as much on rethinking pedagogical models, institutional cultures, and governance structures as on deploying new hardware or platforms. A central theme in the literature is the design of personalized and adaptive learning environments that leverage AI, learning analytics, and ubiquitous connectivity to tailor content, pacing, and support to individual learner profiles while freeing educators to focus on coaching, feedback, and the orchestration of rich learning experiences. Studies on AI-enhanced and data-driven higher education document how real-time analytics, intelligent tutoring systems, and smart classrooms can improve the detection of learning difficulties, support early interventions, and scaffold self-regulated learning, provided that these systems are aligned with transparent, human-centered pedagogical intentions. At the same time, commentators caution that such personalization must not devolve into opaque algorithmic tracking; instead, learners should be empowered to understand and negotiate how their data are used, maintaining agency within digitally mediated learning trajectories (Asrifan & Dewi, 2024). Technologically, Education 5.0 is associated with complex assemblages of AI, edge and cloud computing, 5G connectivity, VR/AR, IoT-enabled smart campuses, social-learning platforms, and gamified analytics that together constitute an "always-on" learning infrastructure. Empirical reports from tertiary institutions show that these tools can create immersive simulations, enable peer-to-peer and cross-institutional collaboration, and generate fine-grained data to inform curriculum and policy decisions, thereby blurring boundaries between formal, non-formal, and informal learning spaces. However, the same studies highlight substantial implementation challenges, including interoperability issues, faculty workload and training, and the risk that educational decision-making becomes overly driven by metrics rather than by broader developmental goals. Another distinctive strand of Education 5.0 scholarship stresses the integration of 21st century skills—critical thinking, complex problem-solving, creativity, collaboration, communication, socio-emotional resilience, and ethical responsibility—within lifelong learning frameworks. In this view, technical and digital competencies are necessary but insufficient; learners must be prepared to navigate volatile labor markets, hybrid human-AI workplaces, and contested public spheres, which requires curricula that deliberately interweave disciplinary knowledge with transversal competencies and reflective practice. Research on project-based and problem-based implementations of Education 5.0 suggests that authentic, interdisciplinary tasks supported by digital platforms can foster these competencies, though robust longitudinal evidence on outcomes remains limited. Finally, Education 5.0 is closely linked to sustainability and equity agendas, including the sustainable development goals, open knowledge movements, and the co-creation of innovation ecosystems involving universities, communities, and industry partners. While digital platforms can expand access to high-quality resources and enable collaborative problem-solving around local and global challenges, multiple studies warn that without deliberate policies addressing infrastructural disparities, digital skills gaps, and institutional capacity, Education 5.0 initiatives may exacerbate rather than reduce educational inequalities. Current research therefore calls for multi-level governance and investment strategies that pair technological innovation with inclusive design, teacher professional development, and context-sensitive support mechanisms, so that the promised benefits of Education 5.0 translate into genuinely more just and resilient learning systems. Practically, Education 5.0 can be understood as a university environment where students learn through flexible, AI-supported projects, simulations, and collaborations that extend beyond the classroom walls. For instance, a mass communication course may combine on-campus newsroom simulations with remote, AI-mediated teamwork on cross-border media campaigns.

Creative Media Management

Creative media management occupies a distinctive niche at the intersection of strategic communication, project management, and creative production, translating organizational objectives into data-informed, audience-centric content across an expanding array of media platforms. Research on creativity management

in advertising and digital agencies shows that effective campaigns emerge when creative storytelling is tightly coupled with strategic planning, resource allocation, and performance analytics rather than treated as a purely artistic endeavor. This perspective reframes creative media work as an integrated system in which idea generation, content design, distribution decisions, and impact evaluation are orchestrated as part of a coherent managerial framework (Mears, 2023; Rubik, 2022; Wardhani, 2022). The rise of social media and platformed communication has profoundly altered how creativity is organized and governed, creating new forms of participatory feedback, real-time experimentation, and iterative optimization in campaign development. Rubik's (2022) framework on the role of social media in creativity management highlights how platforms function simultaneously as channels, idea laboratories, and analytics environments, forcing agencies to redesign team structures, workflows, and decision rules around continuous engagement metrics and user responses. Parallel work on social-media production fields and influencer cultures further underscores that creative media management must navigate complex cultural economies of attention in which value is coproduced by creators, brands, platforms, and audiences (Rubik, 2022; Sarmah et al., 2023). Operationally, creative media management depends on robust project-management and workflow-engineering techniques that can reconcile creative uncertainty with tight deadlines and budget constraints. Studies applying the critical path method to media and feature production demonstrate how network-based scheduling helps teams prioritize tasks, anticipate bottlenecks, and optimize production timelines while preserving space for creative iteration. Complementary research on social-media asset management and agency workflows shows that dedicated information systems and web-based platforms can enhance coordination, transparency, and accountability across distributed teams by centralizing briefs, content versions, approvals, and performance data. In this context, digital asset management and archival practices are not merely back-office functions but strategic enablers of content reuse, versioning, and long-term brand equity (Wofuru-Nyenke, 2024). The technological frontier of creative media management increasingly involves the integration of advanced AI- and data-driven tools into the creative pipeline. The Design project, for instance, illustrates how computer vision, 3D reconstruction, and multimodal content analysis can automatically extract and repurpose elements from large multimedia collections to support architects and game designers, thereby augmenting human creativity and accelerating design cycles. Such systems exemplify a shift from managing finished assets to managing dynamic, re-combinable media objects and generative resources, requiring managers to develop new competencies in tool selection, data governance, and human-AI collaboration. Together, these strands of research suggest that contemporary creative media management extends beyond content and personnel administration to encompass the strategic configuration of intelligent technologies, automated workflows, and analytic infrastructures that collectively enhance creative capacity, production efficiency, and organizational competitiveness in the creative industries (Symeonidis et al., 2023). In everyday terms, creative media management is the process of planning, producing, and distributing content so that the right stories reach the right audiences at the right time. A media program, for example, might use these principles to coordinate student teams who design social media campaigns, podcasts, and video reports for real community partners.

AI Integration in Educational Media Management

AI integration in educational media management is increasingly understood as a shift from manually curated, static media collections toward dynamic, data-driven ecosystems in which intelligent systems support the full lifecycle of educational content—from creation and description to distribution, preservation, and reuse. Empirical studies on AI in media education show that such systems enable automation of routine operations (e.g., tagging, indexing, captioning, and routing of media assets) while also personalizing access to resources for students and instructors, thereby enhancing both operational efficiency and pedagogical responsiveness in higher-education settings (Huddart, 2022; Samigova, 2023). The first major strand of research focuses on AI-enhanced learning management and content-curation platforms. Studies of AI-enabled LMS document how machine-learning algorithms can analyze learner behavior, recommend relevant media objects, and adapt the sequencing of digital resources to individual needs, turning repositories into proactive learning assistants rather than passive storage systems. Work on AI-driven content curation similarly demonstrates that automated filtering, summarization, and trend detection can help instructional designers navigate large pools of open educational resources and institutional media, reducing cognitive load

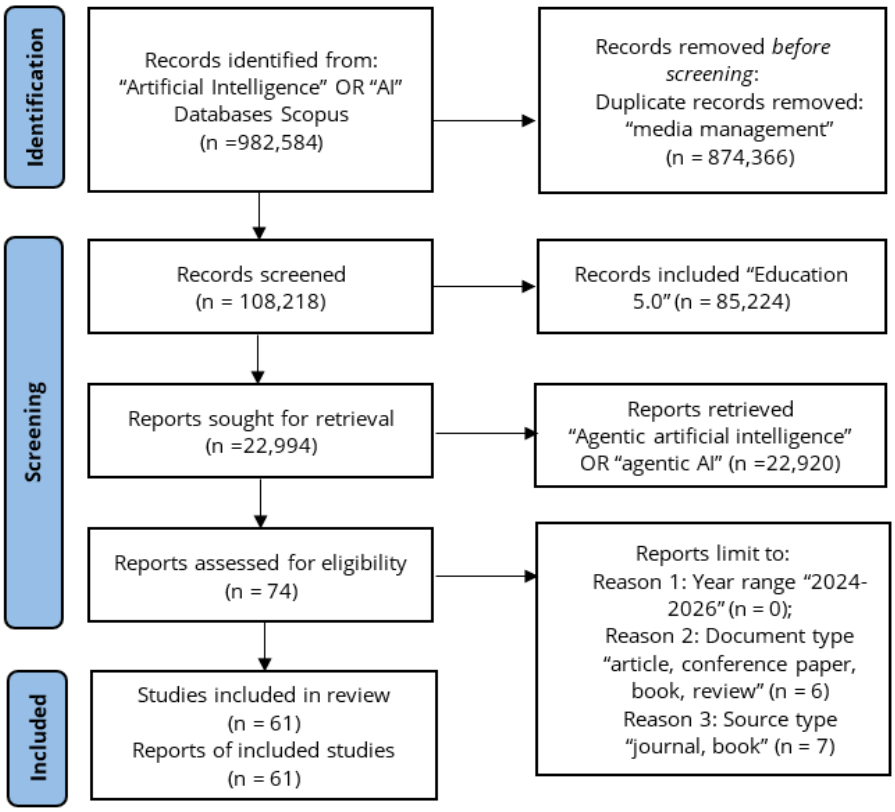

Figure 1. PRISMA of Agentic AI-driven creative media management in mass communication Education 5.0 [Adapted from Page et al. (2021)]

and allowing human experts to concentrate on higher-level design and facilitation. These developments position AI as a mediating layer between vast digital media inventories and the situated, evolving requirements of curricula and learners in Education 5.0. A second strand examines AI-powered digital asset management and digital-preservation infrastructures in educational contexts. Research on AI-driven DAM systems highlights how automated metadata generation, intelligent search, and workflow orchestration can streamline the management of large audio-visual collections used in teaching and outreach, improving discoverability and ensuring consistent branding and rights management across platforms. Complementary work on AI in academic libraries and digital preservation shows that machine-learning models can enrich bibliographic records, support long-term curation of institutional media, and provide conversational discovery interfaces, thereby extending the reach and impact of educational media beyond conventional library boundaries. Together, these studies suggest that AI integration in educational media management is not merely a technical upgrade but a restructuring of how institutions organize, govern, and mobilize media resources in support of teaching, learning, and research

MATERIALS AND METHODS

Systematic Review Protocol

This study employs a mixed-method SLR that combines an SLR with bibliometric analysis, following the PRISMA 2020 guidelines to ensure methodological transparency, reproducibility, and consistency (Page et al., 2021). PRISMA is a widely recognized framework used for conducting SLRs across disciplines, including media and technology research, and the document selection procedure for this study is illustrated in **Figure 1**, with detailed inclusion and exclusion criteria presented in **Table 1**.

Data Collection

The primary data source for this review is the Elsevier Scopus database, selected for its broad coverage of multidisciplinary peer-reviewed journals in media, communication, and educational technology. The search

Table 1. Inclusion and exclusion procedure of referenced literature

Screening type	Selection criteria	Included	Excluded
Initial identification & domain filtering	Records identified through Scopus database using keywords "Artificial Intelligence" OR "AI", excluding records unrelated to "media management."	108,218	874,366
Conceptual screening: Education 5.0	Screening for thematic alignment with Education 5.0 frameworks, focusing on human-centric technological integration.	85,224	22,994
Technological specification: Agentic AI	Targeted retrieval of literature specifically addressing "Agentic Artificial Intelligence" or "Agentic AI."	22,920	74
Thematic eligibility: Mass communication	Assessment of relevance to mass communication education and creative media management contexts.	74	13
Final quality appraisal	Inclusion of peer-reviewed articles, books, and reviews published within the 2024-2026 period with full-text availability.	61	-

strategy was designed around a series of Boolean keyword combinations that capture the intersection of AI, Agentic AI, creative media management, and mass communication Education 5.0, using terms such as "Artificial Intelligence", "AI", "media management", "education 5.0", and "agentic artificial intelligence/agentic AI". A comprehensive database search was conducted on 10 January 2026, covering the period from 1 January 2020 to 1 January 2026 to capture the contemporary rise and evolution of AI technologies in journalistic and educational media practice. Scopus was selected as the primary database because of its extensive coverage of multidisciplinary, peer-reviewed journals in media, communication, and educational technology, whereas Web of Science was used to cross-check and complement records in high-impact outlets. Nonetheless, reliance on these two indexing services may bias the corpus toward English-language, high-income country scholarship and underrepresent local or regional journals that are not indexed, a limitation we acknowledge when interpreting the generalizability of our findings.

Data Analysis and Tools

Data analysis proceeded in three stages using a combination of VOSviewer and the Bibliometrix package in R to support both bibliometric and content-analytic procedures. First, a performance analysis was conducted to address objective 1, employing descriptive statistics to examine publication trends, the most productive authors, institutions, countries, and leading journals in the field. Second, a science-mapping phase addressed objective 2 by constructing co-word, co-authorship, and thematic-evolution networks that visualize the intellectual and collaborative structure of Agentic AI-driven creative media management research. Third, a descriptive content analysis was undertaken to respond to objective 3 and objective 4, involving systematic counting and summarizing of the content of included articles in order to develop comparative tables of tools, core components, and identified research gaps. This three-stage pipeline goes beyond conventional AI-in-education reviews by tightly coupling performance indicators, science-mapping of Agentic AI and GenAI themes, and a comparative content analysis of creative media tools and components specific to mass communication Education 5.0.

Search Strategy, Screening, and Eligibility

A comprehensive Scopus search using the Boolean string (TITLE-ABS-KEY ("Artificial Intelligence" OR "AI") AND PUBYEAR > 2023 AND PUBYEAR < 2027) AND (media management) AND (education 5.0) AND ("agentic artificial intelligence" OR "agentic ai") AND (LIMIT-TO (DOCTYPE, "ar") OR LIMIT-TO (DOCTYPE, "re") OR LIMIT-TO (DOCTYPE, "bk") OR LIMIT-TO (DOCTYPE, "cp")) AND (LIMIT-TO (SRCTYPE, "j") OR LIMIT-TO (SRCTYPE, "b") initially retrieved 916 records. After applying filters for peer-reviewed journal articles, English language, and open-access availability, 352 records remained and were exported to EndNote for de-duplication. The remaining 274 unique articles were independently screened at title and abstract level by two reviewers using PRISMA-aligned criteria; disagreements were resolved through discussion until consensus, and 61 studies that met all inclusion criteria were retained for full analysis.

Figure 1 illustrates the PRISMA framework applied to systematically review and analyze the bibliometric landscape of Agentic AI-driven creative media management in mass communication Education 5.0. This PRISMA flowchart provides a structured representation of the study selection process, which follows the SLR and meta-analysis approach. Identification phase: the initial identification of records was conducted through the Scopus database, with the primary keyword "Artificial Intelligence" OR "AI", yielding a total of 982,584

records. Subsequently, duplicate and irrelevant records were removed using the criterion " media management", reducing the dataset significantly by 874,366 records before screening. Screening phase: following the identification phase, 108,218 records remained for screening. At this stage, the inclusion criterion "Education 5.0" was applied, refining the dataset to 85,224 records. From these, a further subset was identified using the keyword "Agentic artificial intelligence" OR "agentic AI", resulting in 22,920 records available for retrieval. Eligibility assessment: A total of 22,994 reports were initially sought for retrieval, of which 22,920 were successfully retrieved. Eligibility assessment process narrowed the dataset to 74 studies based on specific inclusion criteria. The reasons for exclusion were systematically categorized as follows:

1. Reason 1. Year range (2020-2025) (n = 0)
2. Reason 2. Document types limited to articles, conference papers, books, and reviews (n = 6)
3. Reason 3. Source types restricted to journals and books (n = 7)

Inclusion phase: After the final eligibility assessment, 61 studies were determined to meet all the inclusion criteria and were incorporated into the SLR and meta-analysis. This PRISMA model directly supports research objective 3.1, which aims to conduct a systematic bibliometric analysis and meta-analysis using PRISMA. The methodology aligns with phase 1, ensuring a rigorous approach to filtering relevant academic sources within the Scopus database. The refined data set provides a comprehensive foundation for further investigation into the role of Agentic AI-driven creative media management and their impact on mass communication Education 5.0. The following section presents the key findings derived from the systematic bibliometric analysis and meta-analysis conducted using the PRISMA framework to examine the scholarly landscape of Agentic AI-driven creative media management in mass communication Education 5.0. The results provide an in-depth examination of publication trends, source distribution, geographical representation, and subject area classification.

Inclusion criteria required that studies an explicitly addressed AI or Agentic AI in the context of media management, mass communication Education, or Education 5.0, b were peer-reviewed journal articles, books, or reviews, c was published in English between 2020 and 2026, and d provided sufficient methodological detail to support bibliometric and content-level coding. Exclusion criteria removed records that only mentioned AI tangentially, focused solely on non-educational or non-media domains, lacked full-text availability, or duplicated findings already reported in other included studies. These criteria operationalize the PRISMA 2020 guidance for defining population, concept, and context in media and education reviews and ensure that the final corpus focuses on substantively relevant, methodologically transparent contributions.

Bibliometric Analysis

This section provides a comprehensive bibliometric analysis of 61 scholarly articles on Agentic AI-driven creative media management in mass communication Education 5.0, retrieved from Scopus. The analysis covers publication trends, methodological preferences, disciplinary distributions, author and country productivity, and keyword evolution from 2020 to early 2026. While the initial search scope included articles published from 2020 onward, it is important to note that the inclusion and exclusion criteria—such as document type, language, access status, and topic relevance—were consistently met only by studies published between 2024 and 2026. Consequently, bibliometric trends and thematic patterns discussed in this section are most representative of the 2024-2026 period, although earlier documents within the time window remain included for completeness and historical context.

Methodological and Disciplinary Insights

Figure 2 presents the disciplinary distribution of publications on AI in the broader scientific corpus, revealing a clear dominance of computer science, which accounts for 28.8% of all documents in this dataset. This leading share underscores the central role of technical research in developing algorithms, models, and infrastructures that underpin AI innovation, in line with previous mappings of AI scholarship that locate its core within computer science-oriented venues. The second-largest contribution arises from the social sciences (16.9%), followed by business and management (12.7%) and engineering (8.5%), indicating that questions of AI adoption, organizational strategy, human behavior, and socio-technical design are now firmly embedded in non-technical research agendas. Smaller but still notable proportions are observed in arts and humanities (5.1%), medicine (5.1%), psychology (3.4%), biochemistry, economics, and materials science (each

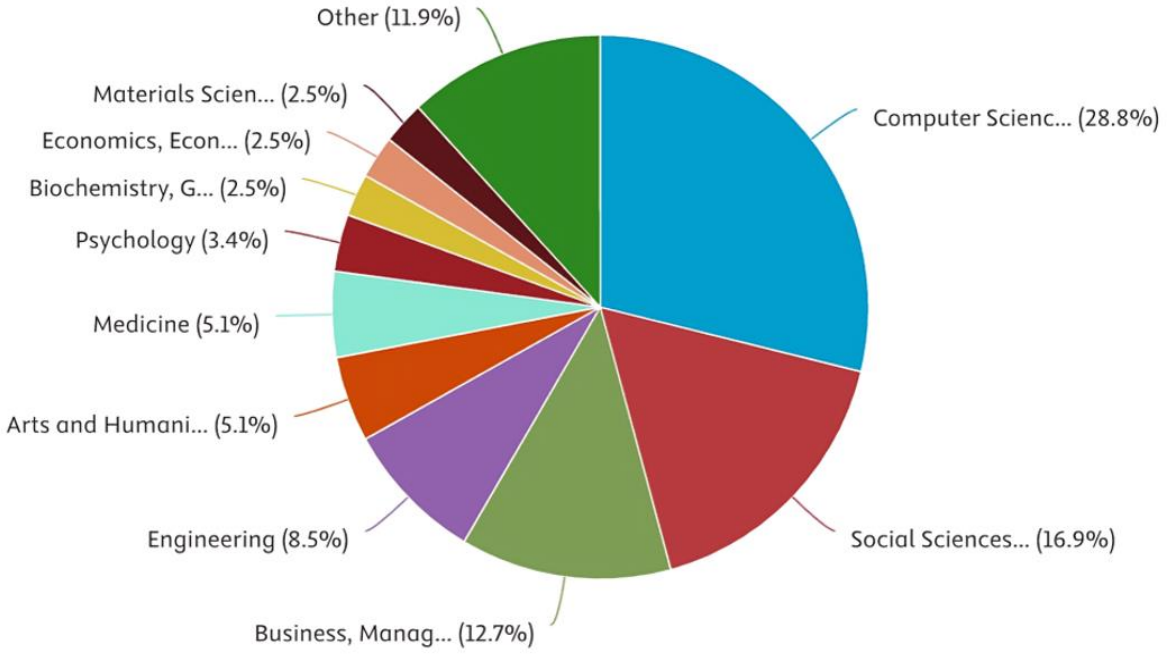

Figure 2. Distribution of AI publications across subject areas (Source: Generated by the Bibliometrix R package)

2.5%), with the residual 11.9% grouped into "other" domains. This long disciplinary tail suggests that AI is no longer confined to STEM fields but is progressively permeating health, basic sciences, and cultural research, echoing recent reviews that document growing engagement with AI across media studies, ethics, and communication scholarship. In particular, contributions from arts and humanities and psychology point to increasing attention to interpretive, experiential, and cognitive dimensions of AI—such as audience perception, creativity, and human-AI interaction—which complement the optimization focus of computer science-driven work.

Figure 2 reflects a maturing, interdisciplinary AI research landscape in which technical development, social impact, and domain-specific applications are co-evolving rather than proceeding in isolation. The strong presence of computer science ensures continued advances in performance and scalability, while the substantial shares from social sciences, business, and humanities-related areas foreground issues of governance, ethics, organizational change, and trust that are critical for AI deployment in real-world settings, including journalism and mass communication. This distribution therefore mirrors the epistemic division identified in prior work: technical communities tend to priorities accuracy, efficiency, and system design, whereas social and communication researchers emphasize democratic values, user agency, and normative questions about AI's role in contemporary information ecosystems.

Publication Trends and Top Contributions

Figure 3 indicates a highly skewed temporal pattern, with publication output rising from only 2 documents in 2024 to a sharp peak of 54 documents in 2025, before declining to 5 documents in early 2026. This surge in 2025 suggests that Agentic AI-driven creative media management became a prominent research focus only very recently, coinciding with the broader boom in GenAI and Agentic AI applications reported in contemporary AI and media scholarship. The relatively small yet non-zero numbers in 2024 and 2026 imply that the field is still emergent and potentially volatile, with future work needed to determine whether 2025 represents the beginning of a sustained trajectory or an initial exploratory spike in publications.

Overall, the trend demonstrates a transition from fragmented early research to a vibrant and rapidly expanding field of inquiry. The top ten journals having most impact in the area of AI in Journalism are presented as follows in **Figure 4**, which is based on 61 articles located in Scopus. The most productive one on this list is Scientific Reports with 13 publications, which is related to its interdisciplinary nature and the inclination to new.

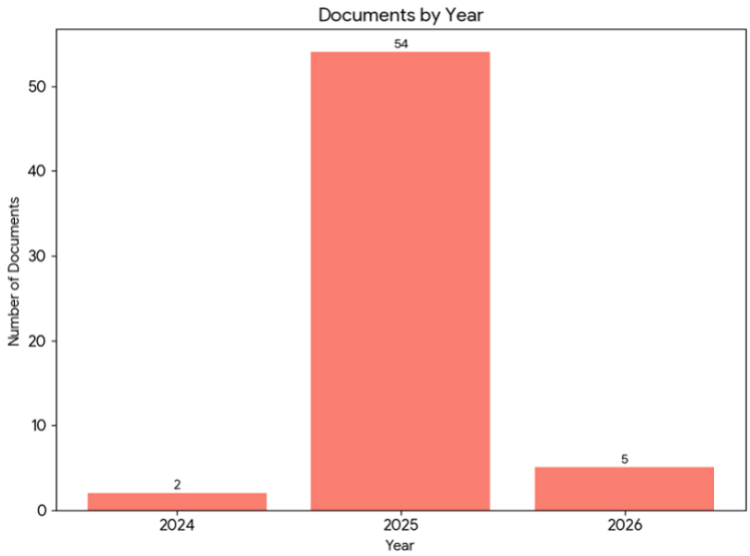

Figure 3. Annual distribution of publications on Agentic AI–driven creative media management (2024-2026) (Source: Generated by the Bibliometrix R package)

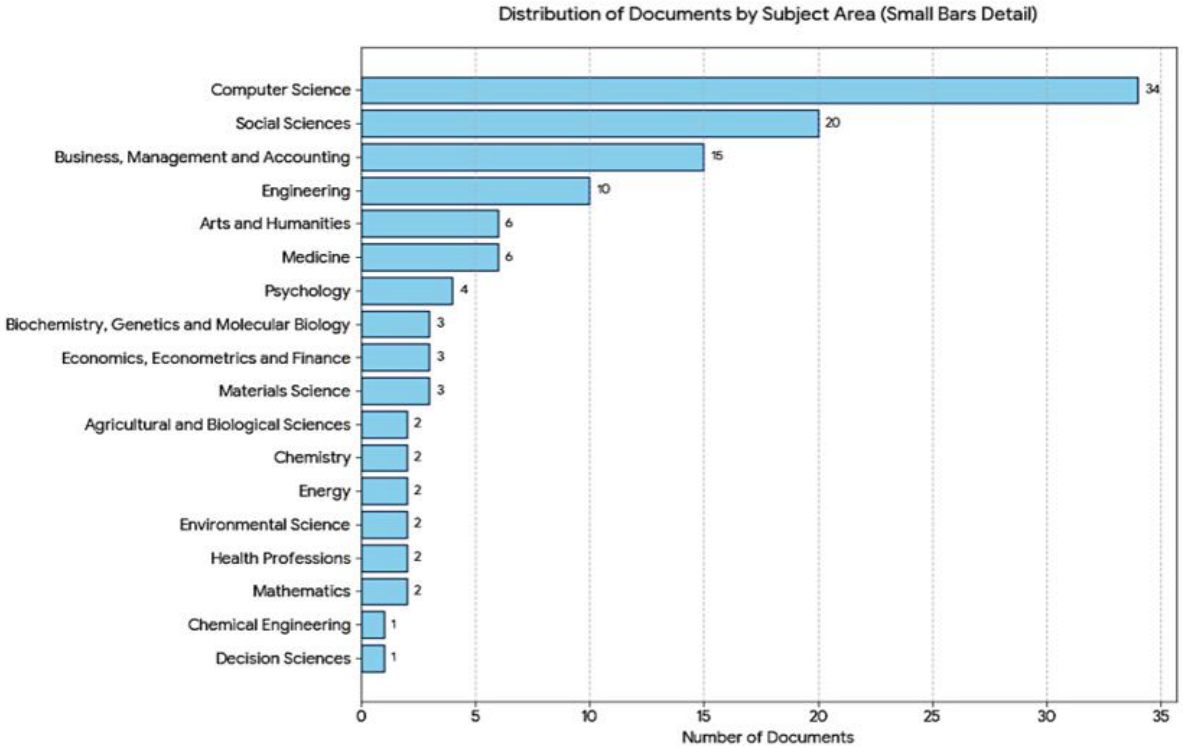

Figure 4. Top 18 journals publishing, based on 61 articles indexed in Scopus (the distribution of documents by subject area [small bars detail]) (Source: Generated by the Bibliometrix R package)

Figure 5 highlights a pronounced geographical concentration of scholarship, with the United States alone contributing 21 documents, or 31.82% of the total corpus, positioning it as the clear epicenter of research activity in this field.

The United Kingdom (12.12%) and China (10.61%) form a second tier of high-output countries, indicating that European and East Asian centers are also key hubs in shaping the emerging knowledge base, particularly around methodological innovation and policy-oriented debates. A third tier consists of Singapore and South Korea (each 7.58%), followed by Canada, Germany, Greece, India, and Italy, which each account for 6.06% of the publications and together represent a diverse mix of Anglophone, continental European, and Asia-Pacific research systems.

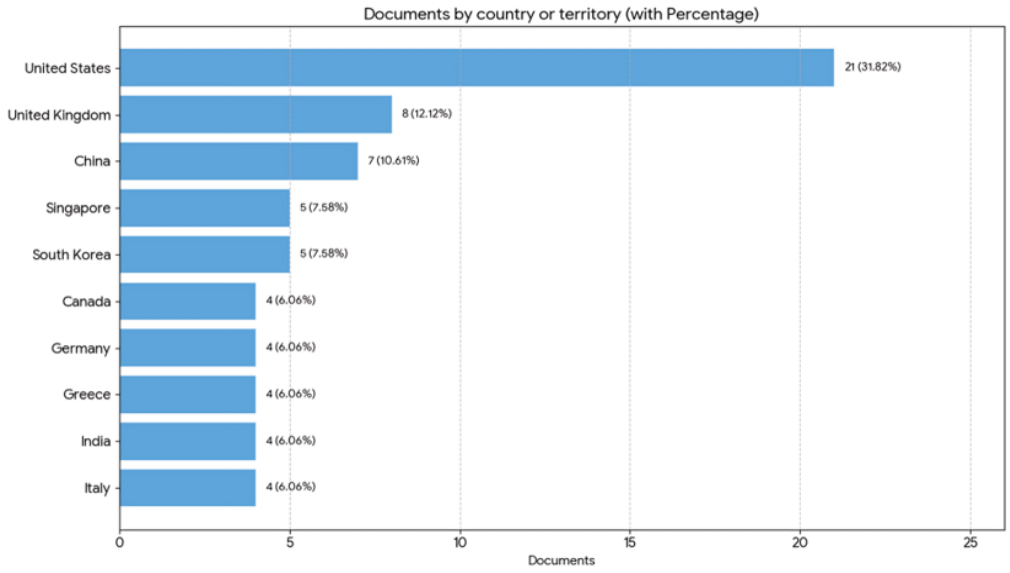

Figure 5. Top 10 countries contributing to research (Source: Generated by the Bibliometrix R package)

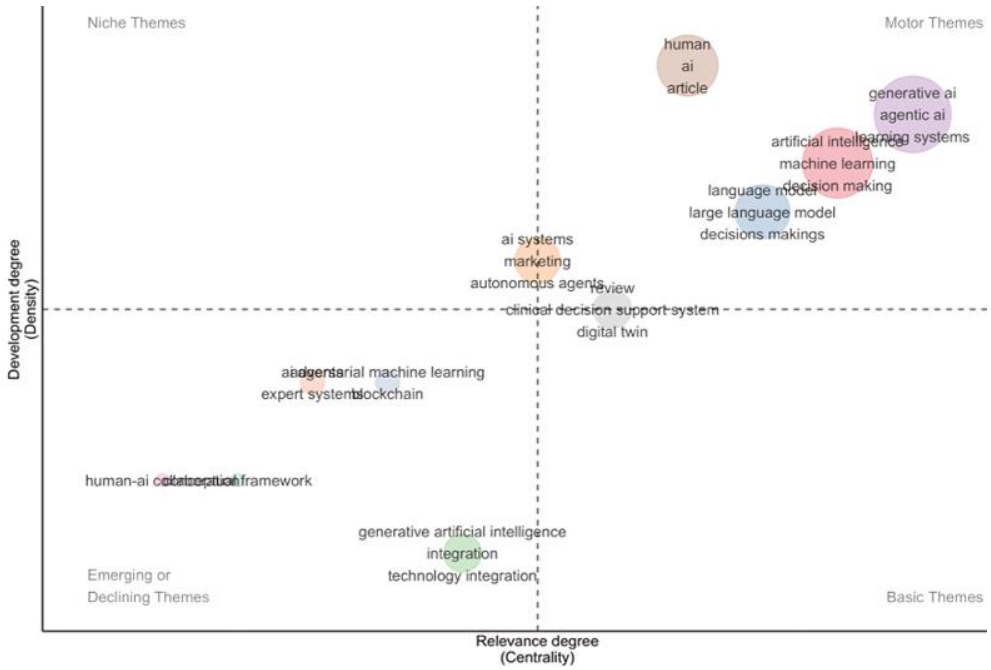

Figure 6. Thematic map of agentic and generative AI research in educational media and decision-support systems (Source: Generated by the Bibliometrix R package)

The predominance of high-income and innovation-driven countries mirrors patterns observed in broader AI and digital-education research, where infrastructural capacity, funding intensity, and established academic networks strongly condition publication output and international visibility. Taken together, this distribution suggests that the global conversation on the topic is currently led by a relatively small group of countries, raising concerns about the under-representation of perspectives from the Global South and from less-resourced higher-education systems. As prior bibliometric studies of AI and media education have noted, such geographic skew can limit the diversity of contextual insights, especially regarding equity, local policy frameworks, and culturally specific practices, and thus underscores the need for more inclusive collaboration and capacity-building initiatives in future research agendas.

Figure 6 visualizes the strategic landscape of research themes by plotting clusters according to their development (density) and relevance (centrality) within the corpus. The upper-right quadrant (motor themes) is dominated by clusters centered on generative ai, agentic ai, AI systems, machine learning, large language

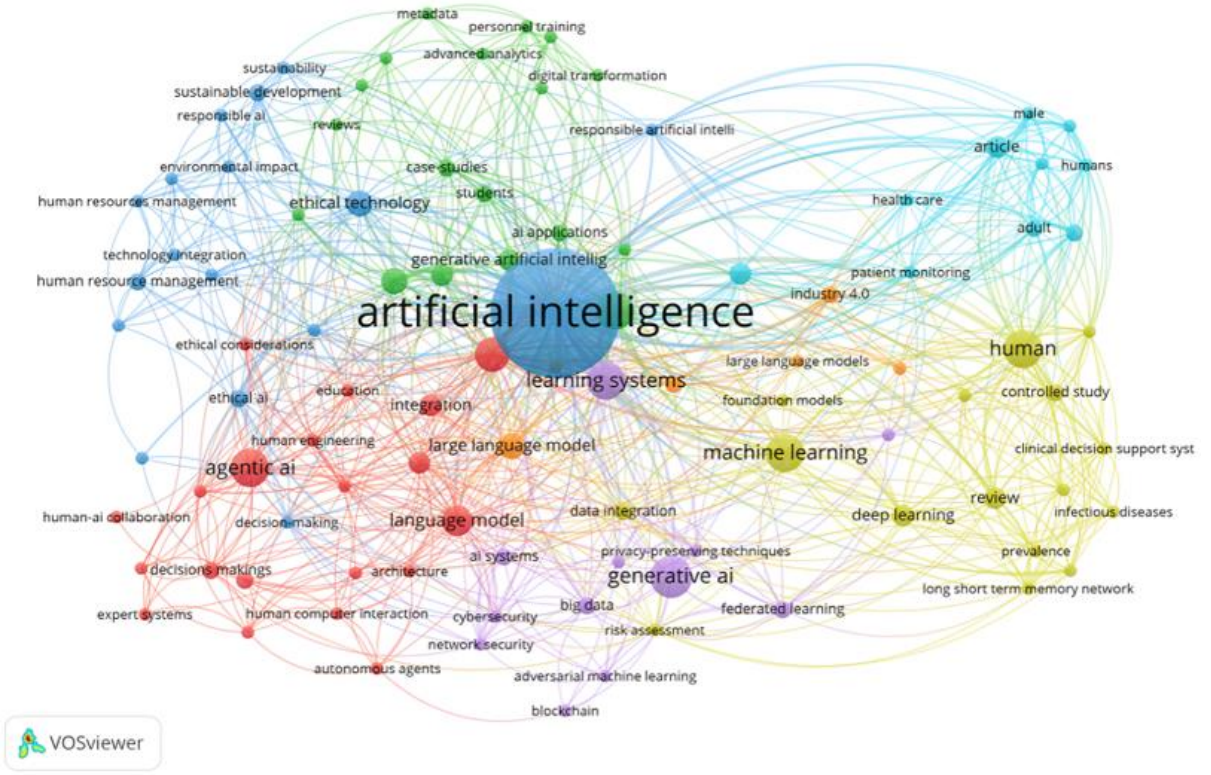

Figure 7. Keyword co-occurrence network of AI-related research themes generated with VOSviewer

model, and decision making/decision systems, indicating that technically oriented work on advanced AI architectures and their use in automated or semi-automated decision processes forms the most developed and structurally central research front. These themes function as conceptual and methodological engines that connect to multiple other clusters, consistent with recent bibliometric mappings of GenAI and Agentic AI across education and media domains.

In contrast, terms such as generative AI integration, technology integration, and human-AI collaboration framework appear in the lower quadrants, suggesting that work on embedding these technologies into organizational and educational practice remains relatively less developed and more weakly connected—characteristics of emerging or still-consolidating themes. The presence of clusters around autonomous agents, ai systems in marketing, and clinical decision support systems near the center of the map points to cross-domain applications that bridge technical AI research with applied fields, echoing studies that document the diffusion of Agentic AI and GenAI into business, health, and learning-support contexts. Overall, the map indicates that while core technical discourse on GenAI and Agentic AI is already mature and central, research on integration, governance, and human-AI collaboration in educational and media settings is still consolidating and represents a key frontier for future investigation.

Figure 7 maps the intellectual structure of the corpus, revealing AI as the most central and densely connected node, from which several color-coded clusters radiate that correspond to distinct yet interlinked thematic areas. One prominent cluster aggregates term such as generative ai, agentic ai, large language model, language model, and autonomous agents, indicating a research front focused on advanced model architectures and human-AI collaboration that is tightly embedded within broader discussions of AI integration and decision-making. A second major cluster groups learning systems, education, and related pedagogical terms, signaling an extensive line of work on AI-enabled teaching, adaptive learning environments, and educational media management that connects strongly to both technical and human-centered themes. Additional clusters emphasize machine learning, deep learning, and health-related keywords on the one hand, and sustainability-oriented terms such as ethical technology, sustainable development, and environmental impact on the other, reflecting parallel streams concerned with optimization, clinical and societal applications, and the governance of AI in relation to ethics and responsibility. The dense web of inter-cluster links suggests a highly interconnected field in which technical innovation,

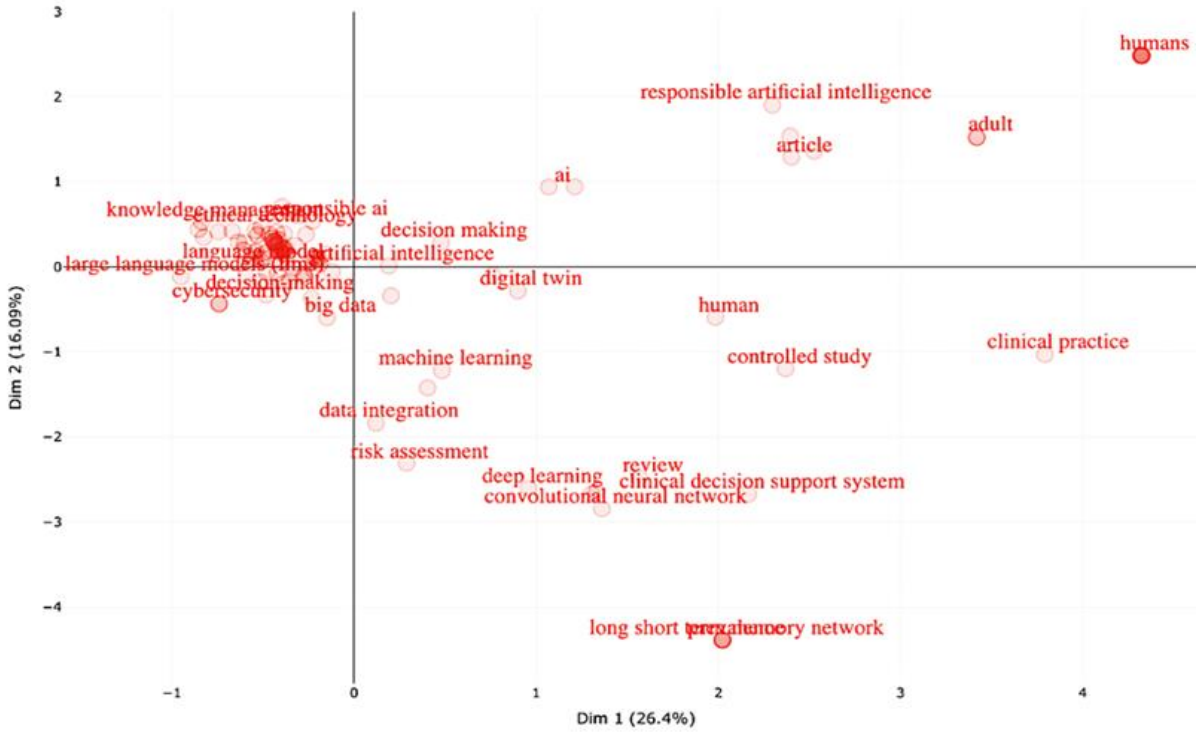

Figure 8. Thematic embedding of AI-related keywords based on multidimensional scaling (Source: Generated by the Bibliometrix R package)

educational practice, ethical regulation, and sustainability debates co-evolve rather than proceeding in isolation, in line with recent bibliometric studies of AI, media, and education.

Figure 8 projects the co-occurrence structure of keywords into a two-dimensional space, with dim 1 (26.4%) capturing a gradient from technical, data-centric topics on the left to clinically and human-oriented themes on the right and dim 2 (16.09%) distinguishing more methodological and infrastructural terms at the bottom from ethical and governance-related notions at the top. The dense cluster around the origin—comprising AI, language model, large language models, decision making, knowledge management, cybersecurity, and big data—indicates a conceptual core where general AI concepts, data infrastructures, and decision-support logics intersect, functioning as a common foundation for multiple application domains. Moving downwards along dim 2, the map reveals a trajectory from general AI towards increasingly specialized machine-learning techniques and infrastructural concerns, including machine learning, deep learning, convolutional neural network, long short-term memory network, data integration, and risk assessment, which form a methodological spine of the corpus. To the right, terms such as clinical decision support system, clinical practice, controlled study, and review cluster together, signaling a strong stream of applied research that translates these technical methods into evaluative and practice-oriented studies in healthcare and related fields. In contrast, the upper-right region is dominated by humans, adult, human, and responsible AI, suggesting that ethical oversight, participant-focused research, and human-centered design are tightly linked in a distinct subspace of the literature. Overall, the configuration indicates that contemporary AI research is organized around a continuum from core technical development through domain-specific implementation to human- and ethics-centered reflection, rather than being fragmented into isolated silos. The proximity of responsible AI to both methodological and human-clinical terms underscore that concerns safety, accountability, and fairness are increasingly embedded within mainstream applied AI research, particularly in high-stakes contexts such as clinical practice and decision support. Taken together, the bibliometric maps and content-level synthesis constitute a novel 'knowledge map' of Agentic AI-driven creative media management that links macro-level publication, collaboration, and keyword structures to micro-level design choices in educational media workflows. Existing reviews typically focus either on technical architectures or on classroom applications, whereas our synthesis explicitly connects these layers within the specific context of mass communication Education 5.0.

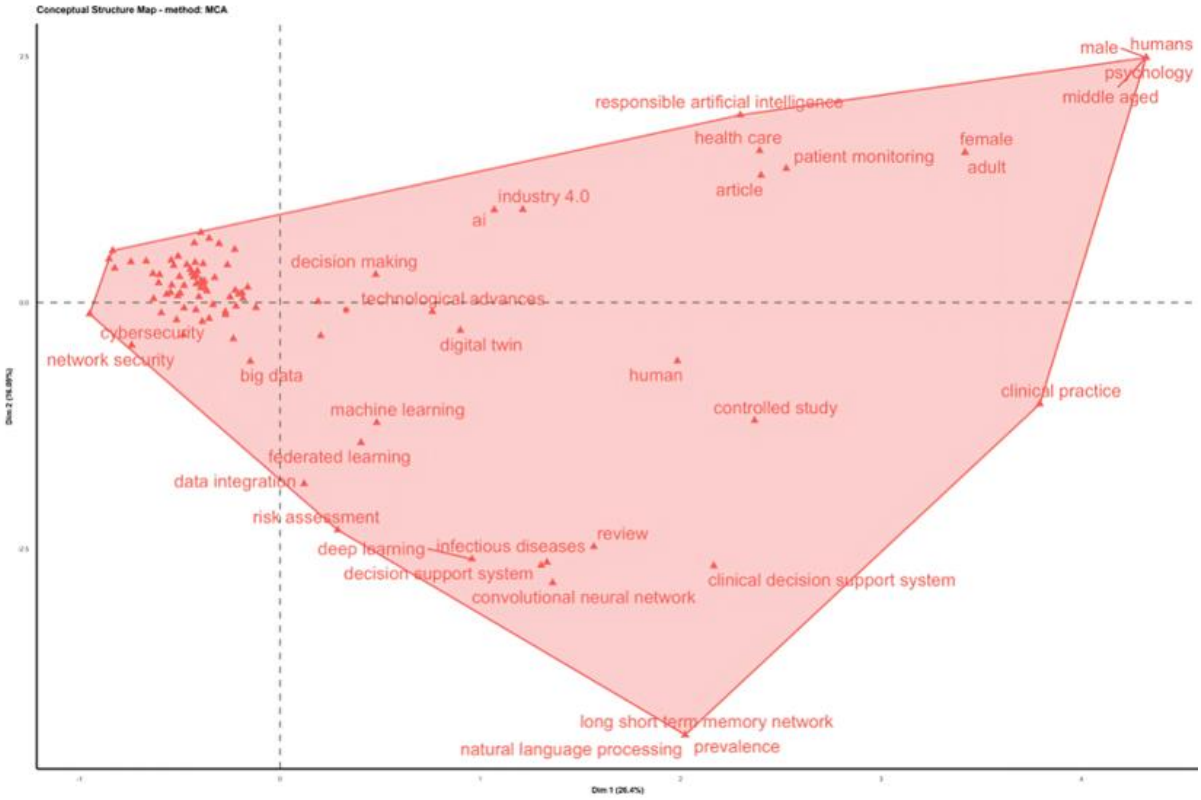

Figure 9. Conceptual structure map of AI-related research domains using multiple correspondence analysis (Source: Generated by the Bibliometrix R package)

Figure 9 delineates the broad conceptual territory of the corpus, with dim 1 (24.4%) separating data- and infrastructure-oriented themes on the left—such as network security, cybersecurity, big data, data integration, and risk assessment—from application- and human-focused topics on the right, including clinical practice, patient monitoring, health care, and demographic descriptors like male, female, adult, and middle aged. This gradient indicates that contemporary AI scholarship spans a continuum from foundational work on secure data architectures and algorithmic infrastructures to clinical and population-level implementations, echoing prior bibliometric findings that highlight the twin pillars of technical robustness and domain-specific application in AI research. Along dim 2 (16.0%), the upper region is dominated by governance- and responsibility-oriented terms such as responsible AI and technological advances, while the lower region concentrates more heavily on methodological constructs, including deep learning, convolutional neural network, natural language processing, long short-term memory network, and clinical decision support system. The positioning of industry 4.0, ai, and decision making near the center suggests that these ideas function as conceptual bridges between infrastructural, methodological, and applied clusters, linking industrial automation, healthcare, and security contexts within a shared discourse on AI-enabled decision support. Overall, the polygon capturing the convex hull of terms illustrates that responsible AI and clinical practice anchor one side of the conceptual space, while cybersecurity, big data, and advanced machine-learning architectures anchor the other, underscoring how ethical, human-centered concerns and technical innovation are co-constitutive rather than peripheral in the current AI research landscape.

Figure 10 synthesizes the salience of terms across the corpus, with AI occupying the most prominent position, confirming its role as the overarching conceptual anchor that ties together diverse discussions on technology, pedagogy, and governance. Surrounding this core are large, visually salient terms such as generative ai, machine learning, learning systems, language model, agentic ai, decision making, and human, which together indicate that current scholarship is heavily oriented toward advanced model architectures and their deployment in decision-support and learning environments. The presence of additional, medium-sized terms—ethical technology, sustainable development, engineering education, students, teaching, and human resource management—signals a strong concern with educational, organizational, and socio-ethical

Figure 10. Word cloud of high-frequency keywords in the Agentic- and Generative-AI literature (Source: Generated by the Bibliometrix R package)

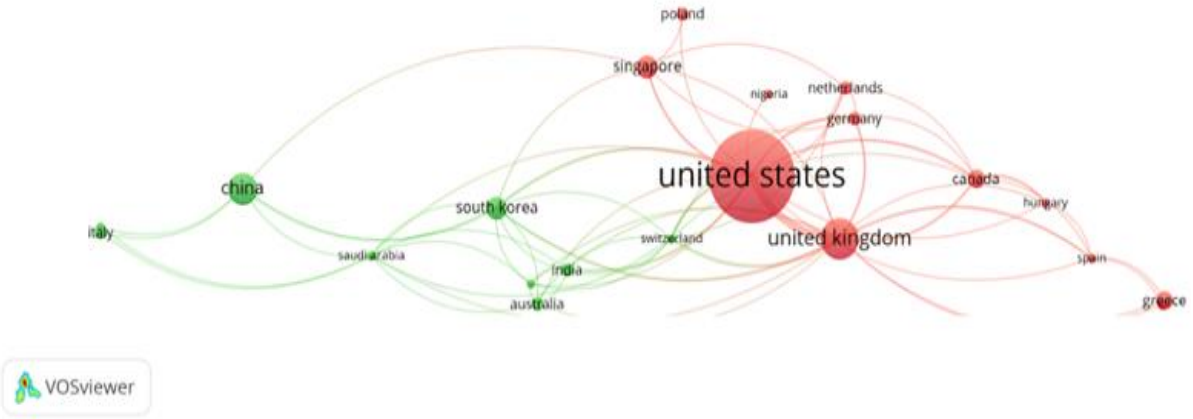

Figure 11. International co-authorship network of countries in Agentic AI and GenAI research (Source: Generated by the VOSViewer)

implications rather than purely technical optimization. This pattern aligns with recent bibliometric analyses showing that research on AI in media and education increasingly intertwines technical innovation with questions of responsibility, human-AI collaboration, and sustainable transformation of institutions and work practices.

Sentiment Trends in Agentic AI and GenAI Research

Figure 11 depicts a highly centralized collaboration structure in which the United States functions as the primary hub, forming dense co-authorship ties with the United Kingdom, Germany, Canada, Greece, Singapore, and several other countries. The sizeable node for the United States and the thick connecting lines indicates not only high publication output but also a pivotal brokerage role in linking European and Asia-Pacific partners, consistent with prior bibliometric studies that position U.S. institutions at the core of global AI collaboration networks. The United Kingdom emerges as a secondary hub, mediating collaborations among European countries such as Germany, the Netherlands, Spain, Poland, and Greece, while China, South Korea, India, Australia, and Saudi Arabia form a partially connected cluster that interfaces with the transatlantic core through selective partnerships. This topology suggests a center-periphery pattern in which a small set of high-income countries orchestrate much of the cross-border research on Agentic AI and GenAI, potentially shaping agendas and methodological standards, whereas many other nations participate through bilateral or regional ties with these central actors.

Figure 12 shows a markedly asymmetric distribution of publication output, with the USA contributing 11 documents (24.44%), followed by China with 7 documents (15.56%), together accounting for roughly two-fifths of all items in the corpus. A second tier of producing countries—Greece and the United Kingdom (each 6.67%) and Australia, Italy, Korea, Poland, and Portugal (each 4.44%)—reflects the growing involvement of European

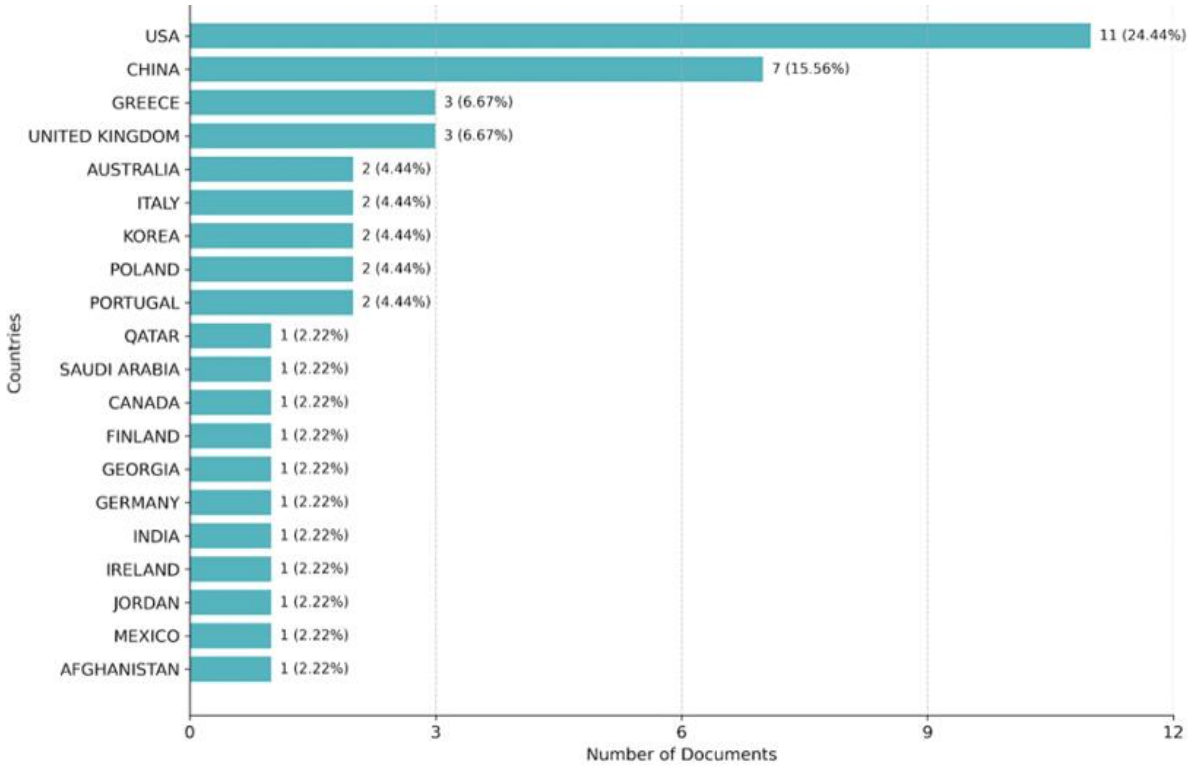

Figure 12. Country productivity in Agentic AI and GenAI research (number and percentage of documents) (Source: Generated by the Bibliometrix R package)

and Asia-Pacific systems in shaping the scholarly conversation on advanced AI and its applications. Below this tier, a long tail of countries (e.g., Qatar, Saudi Arabia, Canada, Finland, Germany, India, Ireland, Jordan, Mexico, and Afghanistan), each contributing a single document (2.22%), underscores the emergent and uneven nature of global participation in this research area. Similar to patterns reported in broader AI and digital-education bibliometrics, the dominance of a small group of high-income countries raises concerns about geographic and epistemic concentration, suggesting that perspectives from many regions—particularly the Global South—remain under-represented and that targeted collaboration and capacity-building initiatives are needed to diversify future research agendas.

Table 2 indicates that research on Agentic AI and media in educational contexts is highly diverse in both methodological design and application focus, ranging from experimental curriculum interventions and large-scale predictive frameworks to narrative reviews and ontology-driven taxonomies. Across these studies, Agentic AI or GenAI systems are deployed for tasks such as persona-based media training, augmented teacher development, adaptive support for complex educational goals, and autonomous orchestration of multimedia projects, suggesting broad potential to enhance personalization, engagement, and cross-functional coordination in learning environments. At the same time, the "Advantages" and "Limitations" columns reveal a consistent tension between promised pedagogical benefits and unresolved risks. Reported gains—improved predictive accuracy, higher competency scores, scalable content generation, and more efficient assessment or onboarding—are offset by concerns about data quality, privacy, bias, opacity of "black-box" models, over-reliance on automation, and gaps in ethical governance, particularly around goal alignment and accountability. Several studies also highlight under-representation of specific demographic groups, infrastructural constraints, and methodological immaturity (e.g., lack of longitudinal metrics), underscoring that Agentic AI-driven media systems are still in an exploratory phase and require more rigorous, inclusive, and transparent evaluation before being embedded as core infrastructure in education.

Collectively, these studies illuminate how Agentic AI and GenAI are being operationalized as cognitive scaffolds, autonomous tutors, and orchestration systems across entrepreneurship, professional training, and organizational management, while simultaneously exposing new risks around ethics, equity, and governance in educational media ecologies.

Table 2. Summary of studies on Agentic AI and media in educational contexts

Reference	Method	Application	Advantages	Limitations
Krakowski (2025)	Experimental curriculum approach and theory-driven case illustration.	Use of GenAI in entrepreneurship education management for media tasks: persona generation, feature brainstorming, and simulating user interactions.	Functions as a complementary cognitive artifact that enhances metacognitive development and persistent skill acquisition through "interactive simulacra".	Potential for performance compression where high performers experience marginal utility; risks of overreliance and "deskilling" without active human engagement.
Li (2025)	ESANN framework, integrating CNNs, Bi-LSTM, and transformer-based recommendation engines.	Large-scale, individualized teacher training and professional development to enhance entrepreneurial competencies.	Achieved 92.5% predictive accuracy and a 24% improvement in competency scores: reduced training completion time by 31.5%.	High-quality dataset requirements; concerns regarding data privacy and potential algorithmic prejudice in performance evaluation.
Korzynski et al. (2025)	Integration of AI agents and avatars with SLT to enable behavior simulation and dynamic feedback loops.	Use of lifelike digital avatars (e.g., synthesis) for personalized training content delivery, virtual teamwork, and organizational learning.	Facilitates continuous, adaptive, and personalized interaction; allows humans to simulate complex scenarios through machine-driven roles.	Ambiguity in human-machine role alignment; skepticism toward machine-led instruction compared to human-led counterparts.
McIntosh et al. (2025)	Agentic AI systems leveraging LLMs with external API execution and autonomous multi-step planning capabilities.	Automated content generation for personalized learning, drafting assessments, and real-time interactive teaching modules.	Enhances scalability of high-quality educational media; enables models to "think" through complex reasoning tasks via test-time compute.	Potential propagation of unvalidated information; inherent biases in generative models; ethical concerns regarding content authenticity.
Lai et al. (2025)	AIGC-driven digital platforms employing content generators, narrative constructors, and virtual AI guides.	Immersive cultural education media (e.g., "cloud tour of Dunhuang") using AI for personalized exploration and context co-creation.	Boosts user engagement and cultural identification through multimodal narratives and situational engagement.	Risks of privacy breaches due to heavy data collection; "perceptual distortion" causing cultural misinterpretation or detachment.
Acharya et al. (2025)	Goal-oriented autonomous systems utilizing reinforcement learning and adaptive control mechanisms.	Adaptive software systems and decision support for managing complex, long-term educational and professional objectives.	High self-sufficiency and adaptability in dynamic environments; minimizes the need for constant human oversight in operational tasks.	Significant ethical challenges in goal alignment; resource constraints; need for robust governance to ensure accountability.
Bahroun et al. (2026)	PRISMA-guided SLR and SCOR model-based functional mapping of GenAI implementations.	Deployment of LLM-based agents as continuous learning platforms, automated assessment tools for professional certification, and tailored mentoring systems for onboarding.	Significant reduction in decision latency, enhanced cross-functional coordination, and streamlined synthesis of fragmented technical documentation.	Presence of methodological immaturity, lack of longitudinal performance metrics, and risks of model "drift" from established pedagogical standards.
Pinto et al. (2025)	Narrative review of machine learning, deep learning, and LLM-powered agentic systems for proactive management.	Implementation of agentic AI for autonomous and pre-emptive decision support, monitoring complex environments, and providing personalized interventions in management workflows.	High predictive accuracy in pattern recognition (AUC up to 0.98), ability to adapt management plans to individual profiles, and improved multidisciplinary coordination.	Underrepresentation of specific demographic cohorts in training datasets, insufficient model explainability ("black boxes"), and digital infrastructure barriers.
Ray (2026)	Development of a unified five-domain risk taxonomy (agentic operation, training data, inference, output, and non-technological factors).	Autonomous orchestration of multimedia presentations, creative content generation, and scientific literature synthesis via multi-step agentic tool invocations.	Substantial productivity gains in drafting comprehensive analyses and executing complex programmatic workflows with minimal human intervention.	Vulnerability to function-calling hallucinations, dynamic bias amplification, privacy leakage across tool chains, and unsustainable computational footprints.

Krakowski (2025) study positions GenAI as a complementary cognitive scaffold in entrepreneurship and media-related education, showing how tools for persona generation, feature brainstorming, and interaction simulation can deepen metacognitive development and persistent skill acquisition through interactive

simulations. At the same time, the work cautions that such augmentation may compress performance differences and risk "overreliance" or learner deskilling if human engagement and critical reflection are not intentionally preserved.

J. Li (2025) focuses on an entrepreneurial skill augmented neural network (ESANN) framework that integrates CNNs, Bi-LSTM, and transformer-based engines to support large-scale teacher training and professional development. The key contribution lies in demonstrating high predictive accuracy and notable gains in competency scores, while also highlighting challenges around high-quality datasets, privacy concerns, and potential algorithmic bias in performance evaluation.

Korzynski et al. (2025) explore lifelike digital avatars integrated with social learning theory (SLT) for behavior simulation and dynamic feedback in educational settings. Their findings emphasize that such agentic avatars can provide continuous, adaptive, and personalized interaction, yet they also raise unresolved issues of human-machine role alignment and lingering skepticism toward machine-led instruction compared with human teachers.

McIntosh et al. (2025) examine AI systems that leverage large language models with external tool execution and autonomous multi-step planning to generate content and orchestrate personalized learning experiences. The study underscores the scalability of high-quality educational media and the ability of models to perform higher-order reasoning, while simultaneously warning about the propagation of unverifiable information and embedded biases that threaten content authenticity.

Lai et al. (2025) investigate AIGC-driven digital platforms using content generators, narrative constructors, and virtual AI guides to support immersive cultural and educational experiences. Their work shows strong potential for boosting learner engagement and cultural reflection through multimodal storytelling, but it also flags significant privacy risks, particularly around behavioral data collection and perceptual distortion in AI-mediated interpretations.

Acharya et al. (2025) conceptualize goal-oriented autonomous systems that employ reinforcement learning and adaptive control to manage complex educational and professional objectives. The central insight is that such systems can foster high levels of self-sufficiency and adaptability in dynamic environments, though the authors stress the need for robust ethical governance frameworks to ensure goal alignment and accountability.

Bahrourn et al. (2026) provide a PRISMA-guided systematic review and SCOR-based model of GenAI implementations, positioning LLM-based agents as continuous learning platforms and automated assessment tools for professional certification. Their synthesis highlights substantial reductions in decision latency and improved cross-functional coordination, while also noting methodological immaturity, limited longitudinal evidence, and risks of pedagogical "drift".

Pinto et al. (2025) offer a narrative review of machine learning and LLM-powered agentic systems for proactive educational and organizational management. They report high predictive accuracy and the capacity to adapt management plans to individual and multidisciplinary profiles, but emphasize that demographic underrepresentation, model opacity, and infrastructural gaps remain significant obstacles to equitable deployment.

Ray (2026) proposes a unified five-domain risk taxonomy for agentic operation, training data, inference, output, and non-technological factors, grounded in examples of autonomous multimedia orchestration and literature-synthesis agents. The work argues that such systems can deliver substantial productivity gains in complex media and research workflows, yet it also documents vulnerabilities to hallucinations, bias amplification, privacy leakage, and unsustainable computational demands that must be addressed through careful design and regulation.

Governance framework for Agentic AI in media education. To move beyond high-level warnings, we synthesize the reviewed work into a practical governance framework for Agentic AI in mass communication Education 5.0. Drawing on Ray's (2026) five-domain risk taxonomy and related studies, the framework distinguishes between risks at the levels of agentic operation, training data, inference, output, and non-technical organizational factors.

DISCUSSION

The findings of this mixed-methods review demonstrate that research on Agentic AI-driven creative media management in mass communication Education 5.0 is both rapidly expanding and unevenly developed across conceptual, methodological, and geographical dimensions. Bibliometric indicators reveal a strong technical core anchored in computer science, machine learning, and large-language-model research, which functions as the main engine for innovation, while social-science and humanities contributions foreground issues of ethics, governance, and professional practice in journalism and media education. This division of labor echoes prior work on AI in journalism and media education, where technical communities tend to prioritize optimization and system performance, whereas communication scholars emphasize democracy, trust, and user agency in AI-mediated information ecologies (Ahmad et al., 2023; Ali et al., 2026; Samigova et al., 2023).

At the same time, the thematic maps and keyword networks indicate that the integration of Agentic AI and GenAI into organizational and pedagogical practice remains at an emergent stage. Motor themes cluster around generative AI, agentic AI, decision systems, and large language models, whereas topics such as technology integration, human-AI collaboration frameworks, and AI-enabled creative media management to appear as less central, lower-density themes, suggesting that translation from technical capability to educational practice is still consolidating. The conceptual-structure analyses further show a continuum from infrastructural concerns (cybersecurity, big data, and network security) through advanced machine-learning architectures to human-centered topics like clinical practice, patient monitoring, and responsible AI, underscoring that ethical and governance questions are increasingly entangled with applied AI research rather than treated as peripheral addons (Ahmad et al., 2023; Hacek, 2025).

The country-level patterns point to significant concentration of agenda-setting power. The United States, China, the United Kingdom, and a small group of European and Asia-Pacific countries dominate both productivity and co-authorship networks, acting as hubs that orchestrate much of the global research on Agentic AI and GenAI in media and education. While this configuration aligns with broader AI bibliometrics, it raises concerns about the under-representation of perspectives from the Global South and less-resourced higher-education systems, where infrastructural constraints, regulatory regimes, and cultural contexts differ markedly. Addressing these imbalances will require intentional collaboration, capacity-building, and funding strategies that enable more diverse institutions to participate in shaping research questions, methodological standards, and design principles for AI-enabled media education (Aguaded et al., 2022; Ahmad et al., 2023; Samigova, 2023).

The synthesis of empirical studies in educational contexts highlights a striking ambivalence: Agentic AI and GenAI systems are reported to enhance personalization, predictive accuracy, content scalability, and cross-functional coordination, yet these benefits are consistently shadowed by unresolved risks. Across interventions involving GenAI scaffolds, agentic tutors, avatar-based simulations, and autonomous orchestration systems, authors document concerns about data quality, privacy, demographic bias, opacity of "black-box" models, over-reliance on automation, and fragile goal alignment between institutional values and AI-driven optimization. Methodological limitations—including small samples, lack of longitudinal evaluation, weak reporting of context, and limited attention to student and teacher agency—further constrain the strength of claims about learning impact and organizational transformation. These gaps echo calls in Education 5.0 and edu-communication scholarship for robust, context-sensitive evaluation of AI interventions that goes beyond efficiency metrics to include critical literacy, professional identity formation, and democratic outcomes (Ahmad et al., 2023; Hacek, 2025).

Taken together, the evidence suggests that Agentic AI-driven creative media management currently operates in a liminal zone between visionary discourse and stable institutional practice. On one hand, the field is buoyed by rapidly advancing technical infrastructures, growing interdisciplinary interest, and promising prototypes that position Agentic AI as co-creator, project manager, and orchestration layer in media-rich learning environments. On the other hand, governance frameworks, curricular models, and evaluative methodologies have yet to catch up, leaving academic leaders and media-services units without clear guidance on when, where, and how these systems should be deployed. Future research should therefore prioritize longitudinal, design-based and comparative studies that link technical architectures with

pedagogical theory, organizational change, and regulatory design, while foregrounding questions of equity, sustainability, and human agency in mass communication Education 5.0 (Ahmad et al., 2023; Hacek, 2025).

Implications for Curriculum and Practice

Implications for curriculum design and media management practice. Building on the mapped intellectual structures and empirical evidence, we derive several concrete recommendations for mass communication Education 5.0. Rather than treating Agentic AI as an add-on tool, programs are encouraged to embed it across curriculum, governance, and media-services operations in staged and accountable ways.

CONCLUSION

This mixed-methods systematic review shows that Agentic AI-driven creative media management in mass communication Education 5.0 is an emergent but rapidly consolidating field, anchored in technically mature work on GenAI and Agentic AI models yet still developing robust frameworks for integration, governance, and human-AI collaboration. Bibliometric analyses reveal accelerating publication growth after 2023, a strong concentration of output in computer science and social-science venues, and geographically skewed authorship dominated by high-income countries, indicating both vibrant interdisciplinary engagement and persistent structural inequities in who shapes the research agenda. Thematic and conceptual maps demonstrate that core discourse clusters around large language models, learning systems, and decision-support applications, while pedagogical integration, ethical oversight, and human-centered design remain comparatively under-developed, marking key frontiers for future inquiry. Evidence from primary studies underscores the pedagogical promise of Agentic AI and GenAI—as cognitive scaffolds, autonomous tutors, and orchestration systems that can enhance personalization, engagement, and cross-functional coordination—yet consistently highlights unresolved risks related to bias, opacity, privacy, over-automation, and unequal access. Taken together, these findings indicate that advancing mass communication Education 5.0 will require not only continued technical innovation but also inclusive, context-sensitive research that links AI architectures with curriculum design, ethical and regulatory frameworks, and capacity-building strategies capable of ensuring that Agentic AI infrastructures augment rather than erode human agency, journalistic values, and educational justice.

Author contributions: PK: conceptualization, methodology, investigation, data curation, formal analysis, visualization, writing – original draft, writing – review & editing; **TN:** conceptualization, methodology, investigation, data curation, formal analysis, visualization, writing – review & editing; **SC:** data curation, formal analysis, visualization, writing – review & editing; **PC:** data curation, formal analysis, validation, writing – review & editing; **RK:** resources, data curation, validation, writing – review & editing; **PN:** conceptualization, methodology, supervision, validation, writing – review & editing; **WK:** conceptualization, funding acquisition, resources, supervision, project administration, writing – review & editing. All authors approved the final version of the article.

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AI statement: Generative AI tools were used solely to assist with language editing, grammatical refinement, and formatting of this manuscript; all ideas, study design, and data analysis are the authors' own, and full responsibility for the content remains with the authors.

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Data availability: Data generated or analyzed during this study are available from the authors on request.

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