

Restructuring Epistemic Spaces: The Rise of AI-Integrated Media Creative Ecosystems

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Abstract

Generative Artificial Intelligence (Generative AI) is fundamentally reshaping media workflows by restructuring creative processes and the institutional conditions of knowledge production. While current research has deeply analyzed AI through the lenses of automation, algorithmic governance, and professional ethics, the transformative dimension of academic knowledge construction remains under-explored. This paper argues that the traditional boundaries between academic knowledge production at universities and practical application in businesses are increasingly blurred in the AI era. Instead, modern media knowledge is co-constructed through continuous interactions among universities, technology firms, newsrooms, regulatory bodies, and intelligent AI systems. The study establishes an analytical framework termed the Distributed Epistemic Ecology (DEE), integrating major theories: Practice Theory, Mode 2 Knowledge Production, Experiential Learning, Sociomateriality, and Science and Technology Studies (STS). This theoretical framework is empirically validated through a qualitative case study of the reality television program AI in Action in Vietnam. The findings demonstrate that generative AI redistributes epistemic authority, transforming direct creative practices into spaces for theoretical inquiry and recursive learning. This study contributes a novel theoretical perspective to Media Studies, STS, and Higher Education in the context of comprehensive digital transformation.

Keywords: Distributed Epistemic Ecology, Generative Artificial Intelligence, Knowledge Production, Media Studies, Practice Theory.

1. Introduction

Historical technological revolutions have consistently reshaped communication modalities and profoundly restructured the institutions of social knowledge production and legitimation. The advent of printing shifted religious and academic authority by democratizing access to texts. The subsequent industrial era clearly demarcated systematic scientific expertise from rudimentary professional practices. Most recently, the explosion of digital platforms has decentralized information production, dismantling the monopoly of traditional media organizations and redefining the relationship between technology and society.

The breakthrough emergence of generative artificial intelligence (Generative AI) since late 2022 marks a watershed developmental milestone. The impact of generative AI extends far beyond simple task automation or routine productivity optimization. By directly participating in complex cognitive activities such as content writing, graphic design, strategic media planning, and artistic decision-making, generative AI challenges long-standing core assumptions regarding the origins of media knowledge, the formation of professional expertise, and the adjudicative role of traditional academic institutions.

Since large language models (LLMs) achieved widespread adoption, research on AI-mediated communication has grown exponentially. Most studies focus on algorithmic governance, transparency, copyright, misinformation, and human-machine collaboration. However, the academic community



largely continues to view AI merely as a technical tool to evaluate performance, productivity, or creativity. The core question that remains inadequately addressed is: How does AI restructure the very process of media knowledge production?

This omission stems from the 20th-century linear model, which positions the university as the sole locus of theoretical generation, which is then unilaterally transferred to industry practice (journalism, advertising, public relations). Practice is viewed merely as a site for applying pre-existing theories rather than an independent space for knowledge creation. Generative AI has disrupted this order. Modern media practitioners accumulate knowledge through continuous interaction with AI systems; technology corporations shape professional terminology before it enters university curricula; and online communities self-validate novel creative methodologies before academia even begins to study them.

Recent scholarship increasingly treats generative AI as an epistemic actor rather than a neutral tool, showing how it reshapes editorial agency (Lewis et al., 2025), concentrates power in an AI divide between Global North and South (Munoriyarwa & De-Lima-Santos, 2025), displaces teacher authority as a "surrogate knower" (Jose et al., 2025), and unsettles authorship and trust in creative and journalistic work (Epstein et al., 2023; Peña-Fernández et al., 2023; Sahebi & Formosa, 2025). Yet this literature remains concentrated on Western newsroom and classroom contexts, leaving unexamined how AI restructures knowledge legitimation in non-Western, entertainment-based, or competition-driven media formats where universities, technology firms, and practitioners interact publicly.

This study addresses that gap by introducing the Distributed Epistemic Ecology (DEE) framework, applied to the Vietnamese program *AI in Action*, offering a novel theoretical lens and Southeast Asian empirical context beyond the newsroom-classroom axis that has dominated the field. This analytical framework views media knowledge as a continuously adaptive ecosystem, where knowledge is co-created through multidimensional networks of interaction among humans, AI systems, educational institutions, and technological infrastructures. To provide empirical evidence, the study conducts an in-depth analysis of the *AI in Action* program in Vietnam, not merely as a conventional technology competition, but as a novel epistemic institution shaping the future structure of media knowledge.

This study aims to develop and empirically validate the Distributed Epistemic Ecology (DEE) framework as an analytical model for explaining how generative AI restructures the production, circulation, and institutional legitimation of media knowledge. Using the Vietnamese reality television program *AI in Action* as a qualitative case study, the research examines how AI transforms creative practice into an epistemic process involving universities, technology firms, media organizations, and AI systems, guided by the question of how generative AI restructures the production, circulation, and institutional legitimation of media knowledge within AI-integrated creative ecosystems.

2. Literature Review

2.1. Historical Trajectory of AI, Media, and Knowledge Production

Existing scholarship has examined generative AI from multiple disciplinary perspectives, including media studies, communication, science and technology studies (STS), and higher education. Previous research has primarily focused on algorithmic governance, automation, ethics, and human-AI collaboration. While these studies have substantially advanced understanding of AI-mediated communication, they have paid comparatively limited attention to how generative AI restructures the epistemic foundations of media knowledge production. To address this gap, this literature review first

traces the historical evolution of AI and media knowledge production before integrating five complementary theoretical perspectives into the Distributed Epistemic Ecology (DEE) framework.

From the perspective of intellectual history in media studies, the development of AI is not an isolated phenomenon but is deeply intertwined with shifts in epistemological paradigms within communication technology research. During the early stages of the computer age, media studies was primarily influenced by information theory and systems thinking. Digital technologies of this period were understood as automation tools that facilitated faster information processing, more efficient newsroom management, or more precise audience segmentation. Epistemic authority remained with university experts and professional journalists through a linear transfer model.

The explosion of the Internet and social media platforms led to a shift toward the “platform paradigm”. Algorithms not only distributed information but directly organized and controlled the public sphere. Academia began to focus on digital infrastructure, algorithmic governance, and social datafication. Scholars from the STS (Science and Technology Studies) school emphasized that technology and society are mutually co-produced. However, even in the platform era, the assumption that universities held the central role in producing and standardizing theoretical knowledge was strictly maintained.

Entering the generative AI era, the challenge has become qualitatively more complex. AI is no longer confined to the role of an infrastructure filtering or distributing information; it actively participates in meaning-making by generating complex texts, artistic imagery, and highly sophisticated media campaigns. The boundary between the creative subject (human) and the tool (AI) is blurring. Professional expertise is no longer the exclusive domain of humans but is distributed across a symbiotic human-machine relationship.

Currently, media innovation occurs at a pace that far exceeds the update cycles of academic curricula. Prompt engineering techniques and AI-integrated multimedia production workflows are tested and standardized first by online communities of practice, open-source forums, and large-scale tech competitions. Media knowledge now moves along multidimensional, non-linear trajectories and continuously self-adjusts through real-world interaction.

2.2. Distributed Epistemic Ecology (DEE): An Integrative Theoretical Framework

Building upon the historical evolution outlined above, this study synthesizes five complementary theoretical traditions to construct the Distributed Epistemic Ecology (DEE) framework. Rather than treating these theories as competing perspectives, the DEE integrates them into a coherent analytical model for explaining how generative AI transforms media knowledge production across individual, organizational, and institutional levels. To comprehensively explain the mechanisms of knowledge construction in the AI era, this study integrates five foundational theoretical branches to build the Distributed Epistemic Ecology (DEE) analytical framework:

2.2.1. Practice as the Core Locus of Knowledge Generation

Practice Theory, as articulated by Bourdieu (1990) and Schatzki (2002), counters the traditional view that theory always precedes practice. Bourdieu introduced the concept of habitus to denote dispositions toward action shaped by lived reality rather than adherence to abstract rules. In an AI-integrated media space, practical competence is not derived from memorizing theories but from direct interaction with AI models to solve concrete media problems. Practice itself is a process of inquiry and epistemic construction.

2.2.2. The Decentralization of Knowledge Beyond Academic Boundaries

The theory of Mode 2 Knowledge Production (Gibbons et al., 2010) indicates that modern knowledge is no longer generated solely within isolated university laboratories. Instead, it arises within a “context of application” involving multiple stakeholders: corporations, governments, society, and independent experts. In the realm of media AI, major tech companies are the ones defining the rules of the game and establishing new theoretical terminologies, transforming knowledge into a decentralized asset across trans-institutional networks.

2.2.3. Recursive Learning and Cognitive Adaptation

Kolb (1984) experiential learning model describes learning through a cycle:

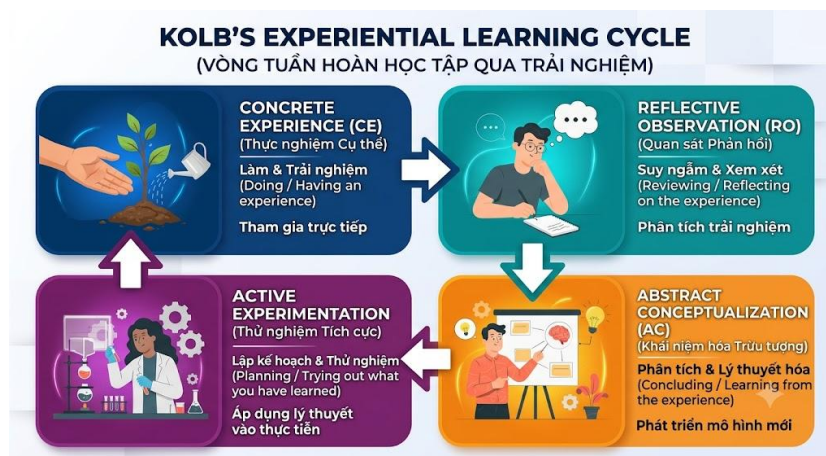


Figure 1. Kolb's Experiential Learning Cycle

In a context where AI changes weekly, this cycle is no longer closed but occurs continuously as infinite recursive learning. Each AI feedback loop forces users to immediately adjust their thinking, turning the work process into a continuous self-training progression of cognitive adaptation.

2.2.4. Sociomateriality and the Distribution of Agency

Orlikowski (2007) theory of sociomateriality argues that technology and social practices are inseparable and deeply intertwined. AI is not a passive tool; algorithms, machine learning datasets, and interface architectures directly shape how humans think and create. Agency in media creation now belongs to a “sociomaterial assemblage” comprising both human and non-human actors.

2.2.5. Institutional Co-production and Knowledge Legitimacy

According to Jasanoff (2004) STS theory, scientific knowledge and social institutional structures are mutually co-produced. The authority to validate knowledge no longer resides exclusively with university academic boards but is negotiated and distributed through consensus among tech firms, state regulatory bodies, professional communities, and consumer markets. The integration of these dimensions constitutes the Distributed Epistemic Ecology (DEE) model presented in table 1 below:

Table 1. Comparison between the Linear Knowledge Transfer Model and the Distributed Epistemic Ecology (DEE)

Comparison Criteria	Linear Transfer Model (Old)	Distributed Epistemic Ecology - DEE (New)
Origin of Knowledge	Universities, academic research institutes	Distributed networks (University - Enterprise - AI)
Role of Practice	Site for applying pre-existing theories	Space for inquiry and generating new theories

Comparison Criteria	Linear Transfer Model (Old)	Distributed Epistemic Ecology - DEE (New)
Nature of AI	Technical tool assisting tasks	Epistemic subject within a sociomaterial assemblage
Validation Mechanism	Academic boards, peer review	Multi-institutional consensus and market feedback
Learning Model	Linear, cumulative fixed knowledge	Infinite recursive adaptive learning (Recursive)

Source: Author compilation

In summary, the literature indicates that no single theoretical perspective sufficiently explains the epistemic transformation brought about by generative AI. Practice Theory clarifies how knowledge emerges through action; Mode 2 explains its production across institutional boundaries; Experiential Learning highlights continuous cognitive adaptation; Sociomateriality accounts for the distributed agency of humans and AI; and STS explains the institutional negotiation of knowledge legitimacy. Their integration provides the conceptual foundation for the Distributed Epistemic Ecology (DEE) framework examined in the following empirical case study.

3. Methods

This study adopts an interpretive qualitative case study design to analyze the structure of knowledge production in practice. The chosen case is the AI in Action program in Vietnam. This is a reality television show combining academia and technology, bringing together major universities, leading media corporations, and prominent AI solution developers in Vietnam. Data were collected from multiple sources to ensure triangulation, including official program documentation such as competition rules, evaluation criteria, creative briefs, and final reports; in-depth interviews and speeches by the judging panel, comprising leading experts, university lecturers, and creative directors; creative media products designed by competing teams using generative AI tools; and public discussions across media and social platforms surrounding the program. The data analysis followed an abductive research strategy as outlined by Timmermans and Tavory (2012). Raw data were initially coded to identify salient practice patterns, which were then continuously compared with the theoretical concepts of the DEE to construct highly generalized scientific arguments.

4. Results and Discussion

4.1. AI-driven Creative Practice as a Locus of New Theoretical Generation

Data analysis from the AI in Action program indicates that competing teams did not approach AI by simply memorizing tool instruction manuals. Conversely, they confronted complex, real-world corporate challenges (e.g., executing a brand repositioning campaign using AI within 72 hours). In this context, legacy theoretical boundaries of message design or consumer behavior proved insufficient to explain how generative AI models responded to highly complex prompts.

Students and practitioners collaboratively developed adaptive prompting matrices to control the output quality of large language models and image generation engines. This process was not mere technical labor but a scientific experiment: they established hypotheses, conducted prompt testing, evaluated AI cognitive bias (AI hallucinations), adjusted contextual variables, and derived optimal interaction principles. Thus, theories of AI-integrated creative communication were generated directly within the process of solving practical problems, supporting the DEE proposition that practice is the core locus of knowledge generation.

4.2. Recursive Learning and Cognitive Adaptation

A prominent finding from this case study is the fundamental change in the nature of learning. In the program, academic advisors did not act as absolute knowledge holders imparting wisdom to students. Because AI tools continuously update (e.g., Midjourney or ChatGPT upgrading their models during the competition), advisors and contestants had to learn together on a flattened playing field.

The competence of media professionals is no longer measured by proficiency in a specific software package. Instead, judges highly valued systems thinking and recursive adaptive capacity. Contestants had to continuously learn from previous prompting failures to restructure their logical approach in subsequent prompts. This is a vivid manifestation of the infinite recursive adaptive learning cycle, where the boundaries between teacher and learner dissolve to make way for the co-production of experiential knowledge.

4.3. Sociomaterial Symbiosis between Humans and Generative Algorithms

Outstanding media products from the competition proved that artistic quality and message efficacy do not depend solely on individual human talent or the computing power of AI. Creativity resides at the sociomaterial intersection. Contestants provide strategic direction, cultural empathy, and ethical critique, while AI expands the conceptual search space, combines non-traditional artistic styles, and materializes design drafts at unprecedented speed.

Several breakthrough works emerged precisely from “errors” or unexpected AI responses that humans astutely retained and further developed. This demonstrates that AI is not merely a tool executing human will, but actively participates in inspiring and restructuring the creative thinking of designers. Creative agency is clearly distributed across the symbiotic network of humans and generative algorithms.

4.4. Distributed Knowledge Production Across Institutional Boundaries

This section discusses Mode 2 Knowledge Production and STS together because they represent complementary dimensions of the DEE framework: the former explains how knowledge is produced across institutional boundaries, whereas the latter explains how that knowledge is negotiated and legitimized through multi-stakeholder governance.

The AI in Action program demonstrates that media knowledge is no longer generated exclusively within universities and subsequently transferred to industry. Instead, knowledge emerges through collaborative problem-solving among universities, technology companies, media organizations, AI developers, and industry partners. Throughout the competition, participants continuously integrated academic communication theories with practical business requirements, AI capabilities, and professional feedback from multiple stakeholders.

This distributed process transformed the competition into a context of application, where theoretical concepts were refined through real-world implementation rather than merely tested against existing frameworks. Universities contributed conceptual foundations, technology firms provided AI infrastructures and technical expertise, while industry partners defined authentic communication challenges. Knowledge therefore evolved through iterative interactions among these actors rather than through a linear process of academic dissemination.

These findings strongly support the Mode 2 Knowledge Production perspective, demonstrating that media knowledge in the AI era is increasingly produced within trans-institutional networks operating beyond traditional disciplinary and organizational boundaries.

The integration of these evaluation criteria illustrates the STS perspective of institutional co-production (Jasanoff, 2004). Rather than being validated solely through academic peer review, media knowledge becomes legitimate through negotiation among universities, technology firms, regulatory

institutions, media organizations, industry partners, and the public. Knowledge legitimacy therefore emerges as a collective institutional achievement rather than the authority of any single actor.

5. Conclusion

This study moves beyond conventional perspectives that conceptualize generative AI primarily as a productivity-enhancing technology or an automation tool in media production. By developing and empirically examining the Distributed Epistemic Ecology (DEE) framework through the case of *AI in Action* in Vietnam, the study demonstrates that generative AI fundamentally restructures how media knowledge is produced, circulated, and institutionally legitimized.

Theoretically, the study contributes to Media Studies and Science and Technology Studies (STS) by integrating Practice Theory, Mode 2 Knowledge Production, Experiential Learning, Sociomateriality, and STS into a unified analytical framework capable of explaining AI-mediated knowledge production. Rather than treating these perspectives independently, the DEE framework shows how they operate as complementary dimensions within a distributed epistemic ecosystem.

The findings further indicate that media knowledge is no longer produced through a linear transfer from universities to industry. Instead, it emerges through continuous interactions among human creators, AI systems, universities, technology firms, media organizations, and broader institutional networks. Consequently, higher education institutions should move beyond transmitting static knowledge and instead cultivate adaptive, collaborative, and critically reflective learning environments that prepare students for AI-integrated creative ecosystems.

This study is limited by its focus on a single qualitative case study within the Vietnamese media context. Although the findings provide valuable theoretical insights, they cannot be generalized to all institutional or cultural settings. Future research should therefore undertake comparative studies across different countries, media industries, and higher education systems to examine the applicability and further development of the Distributed Epistemic Ecology framework in diverse AI-mediated environments.

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