University of Mostaganem-Algeria
VOL: 13 / N°: 02 / (2026) , p. p. 65/75

International Journal of Social Communication
ISSN: 2437 – 1181
EISSN: 2710 – 8139

"Challenges of Methodological Adaptation in Virtual Space Research: An Evaluative Vision of Renewal Paths in Media and Communication Studies"

Hamdi kenza [1*]

[1] University Mohamed lamin debaghine,, k.hamdi@univ-setif2.dz

Received: 07/05/2026 Accepted: 19/06/2026 Published: 30/06/2026

Doi: 10.53284/2120-013-002-004

Abstract:

The need in the virtual environment and the changes that have characterized the study of humanities phenomena and the identification of the field of media science called for a review of research trends in these fields. Research in this new environment opens up new prospects for researchers, especially in the level of Malitodological rethinking approach, allowing for the creation of systematic tools and even new theoretical approaches, from which this study aimed at identifying the problem of practical curriculum renewal in the field of information and communication sciences in the virtual environment And we have been exposed to the reasons behind the need for curriculum renewal in information and communication research, How technological challenges have contributed to the renewal of traditional curricula in media and communication studies And thus a review of the most prominent approaches that contributed to the systematic tradition of information and communication science and to the referral of the blurring of the handling of electronic content and the process of receiving in the virtual environment. Finally, we showed the manifestations of this renewal, which was reflected in the emergence of new research fields in the wide field of information and communication science, which necessitated new methodologies that accommodate these research patterns.

Keywords: scientific methods, communication studies research, virtual environment, renewal methodological characteristics.

*** Corresponding author**

1. INTRODUCTION

Scientific research within the field of Information and Communication Sciences (ICS) constitutes a fundamental pillar for deciphering the phenomena and complexities inherent in this discipline. It serves as a mechanism for uncovering facts, providing empirical explanations, and formulating solutions to media and communication-related problems, all while adhering to rigorous academic and methodological standards. However, much like other social sciences, this field faces significant hurdles regarding the rejuvenation of its research methodologies. The rapid evolution of digital technology and the emergence of new social media platforms have catalyzed fundamental shifts in user behavior and content consumption patterns.

These transformations raise critical questions concerning the adequacy of traditional research methodologies in examining contemporary media phenomena. On one hand, such phenomena necessitate the development of innovative tools and techniques capable of processing and analyzing Big Data. On the other hand, they provoke complex ethical dilemmas concerning data privacy and information security. Furthermore, the increasing socio-cultural diversity poses new challenges for researchers, demanding the adoption of more inclusive and multifaceted methodological approaches.

While traditional quantitative and qualitative methods remain valuable, they often struggle to account for the fluid and pluralistic nature of contemporary media. Consequently, there is an emergent need for novel methodologies rooted in Critical Discourse Analysis (CDA), the study of digital behaviors, and the application of linguistic and sociolinguistic analytics to large datasets.

Moreover, Mixed-Methods Research (MMR)—which integrates both quantitative and qualitative approaches—has become an imperative for gaining a more precise and comprehensive understanding of complex media phenomena. Nevertheless, the development of these modern frameworks encounters numerous obstacles. Accordingly, this study seeks to address the problematic of methodological renewal in the humanities, highlighting its specificities and challenges, while providing a critical perspective on research methodologies within the Information and Communication Sciences.

Based on the aforementioned premises, the following primary research question is posed: What are the challenges facing the renewal of scientific research methodologies in the field of Information and Communication Sciences within the virtual environment?

To address this central inquiry, the following sub-questions are explored:

1. What are the underlying factors necessitating the methodological renewal in media and communication research?
2. To what extent have technological challenges contributed to the modernization of traditional methodologies in media and communication studies?

3. What are the most prominent methodologies that have contributed to updating the methodological traditions of ICS, and how do they address the ambiguity of dealing with digital content and the reception process within virtual environments?

In light of these research questions, this study is structured around the following thematic axes:

- Axis I: The Conceptual Framework of the Study.
- Axis II: The Methodological Characterization of Media and Communication Research.
- Axis III: The Determinants of Methodological Transformation in Contemporary Communication Environments.
- Axis IV: Contemporary Methodological Frameworks and Research Alternatives.
- Axis V: Manifestations and Mechanisms of Methodological Renewal within the Field.

2. Axis I: The Conceptual Framework of the Study

1.2 Definition of Scientific Research

Scientific research is a systematic process of investigating natural phenomena through observation, experimentation, and analysis to generate new knowledge or validate existing theories. It relies on a structured methodology to ensure the reliability and validity of findings, thereby contributing to the advancement of science and technology. It is further defined as a creative endeavor that employs methodical approaches to collect, analyze, and interpret data to answer specific questions or resolve complex problems**. (inc, 2004)**

2.2 Definition of Scientific Method

The scientific method is a systematic process utilized by scholars to study phenomena and test hypotheses through observation and experimentation. It follows fundamental procedural steps: identifying the problem, formulating the hypothesis, designing the experiment, collecting and analyzing data, and disseminating results ((Riverside Local Schools, nd)

The scientific method is also defined as a standardized set of techniques for constructing scientific knowledge. This includes protocols for making valid observations, interpreting results, and formulating generalizations. It must be logical, verifiable, replicable, and subject to peer scrutiny. (**University of Oklahoma, n,d)**

2.3 Definition of Information and Communication Sciences (ICS) Research

Research in this field is defined as the systematic study of media content, the forces that shape its creation, the motivations and patterns of media usage, and the impact of media content and institutions on individuals and society. (**Jean flokat and stephen, l and ann, l, 2007, p. 1)**

The Dictionary of Media and Communication defines media research as investigations aimed at studying mass media by highlighting their influence on individuals, their role in shaping social

processes, and their function in news delivery and event construction. Another perspective views media research as the process of developing constructs, concepts, and symbols for the purpose of generalization. Ultimately, media research represents the organized efforts undertaken by researchers to reach scientific facts by employing specific methodologies and tools to examine the media phenomenon across all its dimensions: the sender, the message, the medium, and the recipient. (youcef, 2017, pp. 111-112)

3. Axis II: Methodological Characterization of Media and Communication Research

The essence of epistemological inquiry within the field of Information and Communication Sciences revolves around the analysis of communicative phenomena and the mitigation of associated field challenges. This is achieved through the deployment of rigorous methodological frameworks aimed at deriving scientific explanations and practical solutions. This research activity can be defined as a series of systematic and organized procedures undertaken by the researcher to explore knowledge-based issues—whether through investigation or demonstration—using analytical tools that facilitate the comprehension of events, the prediction of future trajectories, and the control of variables. Notably, this field is characterized by high dynamism and an expansive scope, leading to profound interdisciplinary intersections with various humanities and social sciences.

Since its inception, this discipline has been distinguished by a multiplicity of visions and methodological currents, with varying causes and implications for scholars, practitioners, and audiences. This pluralism can be attributed to three primary factors:

- **First:** The Relative Recency of Information and Communication Sciences. Compared to other social and human sciences, this field only emerged at the beginning of the last century, specifically in the first quarter of the twentieth century following World War I. Historically, media practice preceded the formal establishment of Communication Science as an academic discipline. The field began to find its way into the academic sphere in the late 19th century in the United States. Robert E. Lee is considered the first to propose university-level training for journalists in 1869 during his tenure as President of Washington College. The discipline solidified its position within the social sciences following World War I and was fundamentally established after World War II. Today, hundreds of American universities offer specializations in Journalism and Mass Media.

- **Second:** The Continuous Mutation of Communicative Action. This is due to its reliance on rapidly evolving technologies. A medium barely completes its life cycle before it is superseded by a more advanced alternative, driven by the swift and successive developments in ICTs. These advancements pose a challenge for researchers—a "race for relevance"—in striving to activate theoretical frameworks capable of explaining action amidst permanent change. Consequently,

communication thought remains in a constant pursuit of technological inventions, which, in their latest iteration, tend to generate "a new medium from within an existing one." This reality has created a genuine dilemma for communication theory, making it increasingly difficult for thought to keep pace with action and further complicating the process of academic consolidation (*Ta'seel*).

- **Third**: Interdisciplinary Origins. The roots of this science lie in the theoretical literature of related disciplines. Communication served as an **"academic bridge"** to other fields. This is evidenced by the fact that among the eleven researchers who contributed to the renowned book The Science of Human Communication, edited by Wilbur Schramm, none were originally specialists in Media or Communication research. Instead, they were scholars from diverse fields such as Political Science, Psychology, and Sociology. Consequently, media and communication research witnessed remarkable developments in the second half of the twentieth century due to several converging factors. (hafssa, 2021, p. 608)

4. Axis III: The Determinants of Methodological Transformation in Contemporary Communication Environments

4.1 Evolution of Media Technologies

The technological surge and digital transformation have precipitated a structural shift in the field of Information and Communication Sciences (ICS)—a discipline uniquely intertwined with ever-changing human and social phenomena. The contemporary media environment is no longer a transient technical development; it has evolved into a foundational reality that reshapes professional practices and introduces complex methodological and theoretical dilemmas. These range from conceptual ambiguities and terminological conflicts to the difficulty of identifying research tools appropriate for digital phenomena.

Understanding deep cultural and social shifts is now contingent upon comprehending the mechanisms of **New Media**. Given its inherently interdisciplinary nature, ICS intersects with philosophy, psychology, and sociology. However, the field faces academic criticism regarding **epistemological inadequacy**, with some arguing that researchers have struggled to achieve an **epistemological rupture** from traditional perceptions and biases. Consequently, there is an urgent need to revise classical methodological frameworks, emphasizing that communicative content cannot be understood in isolation from its technological carrier.

4.2 Shifts in Audience Behavior

The concept of the **Active Audience** has regained prominence, shifting the audience's role from passive reception to active transmission and participation. Within the new communication environment, audience characteristics and roles have been redefined. The technological medium—**New Media**—has established new practices in reception, interaction, and decoding.

These shifts in media consumption patterns have challenged the efficacy of traditional methodologies, necessitating the development of innovative approaches that integrate quantitative and qualitative methods to produce valuable scientific knowledge. **(chafika mehri, amel mehri, 2024, p. 42)**

4.3 Challenges of the Complex Media Environment

Contemporary shifts necessitate innovative methodological approaches to keep pace with the complexity of modern media. The **"**Credibility Dilemma**"** stands out as a primary challenge in the digital environment, where demographic data and opinions shared via new media often lack realism or accurate representation. This information overflow poses an epistemological barrier to the core pillars of scientific research: Reliability and Validity.

Verifying digital data is no longer a mere procedural step but a structural requirement to overcome concerns regarding fraudulent digital content. This includes the validity of data amidst virtual identities, multiple accounts, and the difficulty of defining the internet user population, which complicates sampling. Furthermore, the hypertextual and interconnected nature of social media content presents unique ethical issues regarding data privacy and confidentiality.

4.4 Critique of Traditional Methodologies

Analyzing the deficiencies of classical methodological approaches requires a precise investigation into the causes of this inadequacy. The "methodological crisis" is exacerbated by the increasing complexity of communication issues; as media phenomena expand, the gap widens between traditional tools and their ability to encompass new variables.

The rise of phenomena such as **"**Mass-Self Communication**"** has introduced research concerns centered on how these media are represented, consumed, and integrated into daily life. This has reinforced the status of Qualitative Research, signaling the limitations of relying solely on quantitative methods to understand human communication in the digital age. While quantitative data (demographics, geography, duration of use) is now easily accessible through automated technical programs, the current trend favors qualitative knowledge to understand how users internalize these media.

Methodologies such as participant observation, in-depth interviews, and focus groups provide a deeper understanding of new communication phenomena. Conversely, quantitative research faces hurdles in digital environments due to the difficulty of sampling virtual communities, where the lack of a clear sampling frame raises significant questions regarding data validity and the generalizability of results. **(djabilia yassine, tayar moufida, 2022, pp. 122-123)**

Based on the above, the limitations of a "mono-method" approach in modern ICS studies have become evident. The shift toward Mixed-Methods Research (MMR) represents a conscious response to the fluidity of the communication landscape. It provides a flexible and comprehensive framework that combines the "breadth" of quantitative vision with the "depth" of qualitative analysis, granting media studies a superior capacity for prediction and interpretation in a highly complex digital environment.

5.Axis IV: Contemporary Methodological Frameworks and Research Alternatives

The academic community has encountered fundamental challenges in interpreting communicative behavior patterns across new media applications using classical theoretical frameworks. Research practice has revealed an incongruity between traditional hypotheses and the characteristics of the current digital environment. This interpretative failure is attributed to the fact that most prevailing approaches were historically formulated to align with traditional mass media and their antecedent social contexts.

Consequently, specialists emphasize the imperative of revising and adapting these theoretical currents to respond to the pervasive integration of the Internet into the social structure. This involves developing both **empirical** and **interpretative** research tools. Such a trajectory requires rigorous critical approaches and comparative analyses of available theories to retain and evolve models capable of providing accurate explanations for the profound shifts that intensive new media usage has catalyzed in human behavior.

Many theorists, most notably **Dominique Wolton**, have sought to innovate methodologies to update the methodological traditions of ICS. These efforts aim to resolve the ambiguity surrounding digital content and the reception process in virtual environments. This necessitates moving beyond "classical traditions"—not by discarding them, but through adaptation to suit the specificities of new media. **Wolton** seeks to bridge the gap between legacy sociological theories and emergent communicative phenomena, a concept known as "Methodological Contemporaneity."

1. The Survey Method

The survey method remains the most widely utilized approach in new media research. **Darcy Granello** and **Joe Wheaton** argue that online surveys offer researchers significant advantages, making them a highly attractive data collection technique. Key benefits include time efficiency, low cost, ease of data acquisition, flexibility, enhanced monitoring, and the technological advantage in data classification (sawsen, 2019, p. 225) .The term "technological advantage in classification" refers to **Automated Archiving and Profiling**. Instead of manual data entry, digital media provide instantaneous statistical analysis tools, reducing the margin of "human

error" during the **Coding** and classification stages and providing the researcher with data ready for inferential statistical analysis.

2. Mixed Methods: Quantitative and Qualitative Integration

- **Critical Approaches:** Derived from the ideas of **Jürgen Habermas** and **Michel Foucault**, and viewed through the lens of **Political Economy**, this current raises questions regarding power and control over digital media. It examines the extent of actual freedom in usage. Roehall notes that many developed nations exercise significant surveillance over internet usage to direct citizens toward capitalistic lifestyle patterns. Thus, social class remains a vital variable in understanding new media, as social stratification renders the digital revolution a multi-layered phenomenon.
- **Phenomenological Methods:** Rooted in the philosophy of Edmund Husserl and the contributions of Max Weber, this methodology advocates for a return to the primary level of knowledge: the "lived reality" (Lebenswelt). It requires neutralizing the researcher's preconceptions (Bracketing) to allow the individual's subjective meanings to become the basis for perceiving the essence of truth.
- **Symbolic Interactionism:** Established by **George Herbert Mead** and the **Chicago School**, this approach focuses on social interaction mediated through language. Its core premise is that social reality is a constructive process in which individuals participate through social action using linguistic symbols. This reality is dynamic and fluid, as social change is considered the foundation of social structure.
- **Virtual or Ethnographic Methods:** This category encompasses a variety of research practices, including Online Ethnography, Digital Ethnography, Netnography, and Network Ethnography (which merges ethnography with Social Network Analysis). The common denominator is Ethnography, which the standard definition describes as "associative-inductive research—whose design evolves through the study—based on a family of methods involving direct encounters with people in their daily life contexts and cultures."

It is challenging to present a singular exhaustive map of virtual ethnographic research, but it can be categorized by research objectives as follows:

1. **Ethnography of Online Communities:** Studying virtual worlds and social media sites.
2. **Cross-line Ethnography:** Bridging online and offline social spheres.
3. **Ethnography of Creative Practices:** Investigating digital journalism, focusing on **newsroom routines**, the adoption or resistance of technological innovations, and how journalists and audiences interpret and negotiate editorial policies and media mediation. **(Al-Ayadhi, 2022)**

6. Axis V: Manifestations and Mechanisms of Methodological Renewal in the Communication Field

The digital environment has precipitated a fundamental transformation in the structure of human communication, moving beyond the traditional "One-to-Many" flow of information. The Internet has introduced multi-dimensional communicative models, beginning with "Many-to-One" patterns (such as centralized email correspondence), evolving into "Many-to-Many" reciprocal pluralism (exemplified by mailing lists and newsgroups), and culminating in personalized communication models across social platforms.

These structural shifts have necessitated the emergence of novel research sub-fields within the broader discipline of Media Studies, requiring flexible methodological approaches that accommodate these patterns. Conceptual renewal is not an academic luxury but an inevitable response to the evolution of the phenomenon itself. While classical studies centered on the triad of (Production, Text, and Audience), new media—according to the vision of Lievrouw and Livingstone—demand a transition toward a different theoretical model centered on the triad of (Artifacts, Practices, and Arrangements).

In this context, the communicative act is no longer merely the consumption of content; it has become a series of behavioral activities—such as chatting, blogging, and publishing—conducted via technical media and software systems. These practices do not occur in a vacuum; they are shaped and embodied within "organized digital spaces" and structured social platforms that give the communicative act its contemporary character.

These three levels of new media (Artifacts, Practices, and Arrangements) are intensely dense, both socially and culturally. They are, in other words, more complex than the three levels of classical media. While classical research was preoccupied with deconstructing the linear relationship of the media process (institutions producing content for an audience), new media research transcends this linearity to study "Social Shaping" and social impacts. Researchers must now focus on the interaction, overlap, and mutual interdependence between these three levels, as artifacts, practices, and arrangements intersect in practical life to form a unit governed by dynamic relationships.

This intersection has led to massive quantitative and qualitative changes in media research. It has also driven a vast number of researchers to explore topics related to these technologies, creating numerous research and methodological problematic resulting from this intense acceleration. These rapid changes and emergent developments in new media, particularly in recent years, raise significant questions regarding the current state and trajectory of New Media Studies. **(nouria, 2023, pp. 191-192)**

7. CONCLUSION

The problematic of renewing scientific methodologies in Information and Communication Sciences (ICS) research within virtual environments represents a pressing challenge that necessitates a fundamental rethinking of the theoretical and methodological foundations of the field. The unique methodological specificities of the rapidly evolving digital landscape impose new hurdles on researchers, demanding the development of innovative tools and techniques. Despite these challenges, the virtual environment opens promising horizons for scientific inquiry, providing unprecedented opportunities to explore complex media phenomena.

Consequently, the renewal of scientific methodologies in this discipline is not merely an academic choice but an urgent necessity to ensure the production of relevant scientific knowledge that keeps pace with contemporary global developments. In conclusion, the future of ICS research holds both significant challenges and opportunities, requiring scholars to persist in their efforts to develop more flexible, adaptive, and innovative scientific frameworks.

8. Bibliography List :

1. Al-Ayadhi, n. (2022). *Research Methodologies in Media and Communication Sciences within the Digital Context: Conflict and Divergence.* Consulté le January 07, 2026, sur https://studies.aljazeera.net/ar/article/5378

2. chafika mehri, amel mehri. (2024). Characteristics of the Audience in the New Digital Environment: A Theoretical Vision of the Evolution from the Traditional Concept to the Modern Concept of the Audience. *Journal of Media Studies, 11*(26).

3. djabilia yassine, tayar moufida. (2022). Research in Media and Communication Sciences: Between the Question of Identity, Methodological Dilemmas, and the Challenges of the New Communication Environment. *Algerian Journal of Research and Studies, 5*(1).

4. hafssa, k. (2021). A Critical Vision of Research Methodologies in Media and Communication Studies. *Al-Riwaq Journal for Social and Humanities Studies, 7*(2).

5. inc, N. (2004, may 13). *what is scientific research?* Consulté le 1 15, 2026, sur https://www.nerac.com/glossary/scientific-research/

6. Jean flokat and stephen, l and ann, l. (2007). *the media in your life: anintroduction to mass communication.* (4, Éd.) pearson.

7. *University of Oklahoma*. (n,d). Récupéré sur Scientific method: https://www.ou.edu/limclass/5043/reading/mod02/scientific_method.pdf

8. *Riverside Local Schools*. (nd). Récupéré sur Scientific method notes: https://www.riversidelocalschools.com/Downloads/Section 1- Scientific Method Notes.pdf

9. nouria, a. a. (2023). New Media and the Problem of Methodological Renewal. *journal of Human and Social Sciences, 9*(1).

10. sawsen, L. (2019, 2019). Theoretical and Methodological Issues in New Media Research: An Analytical Reading. *Al-Mi'yar Journal, 23*(47).

11. youcef, T. (2017). Research in Media and Communication Sciences: Between the Imperative of Objectivity and the Problem of Subjectivity—An Exploratory Study on a Sample of Faculty Members at the Faculty of Information and CommunicationUniversity of Algiers 3. *Journal of Communication and Journalism, 4*(1).