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Visual and Textual Filters: How Digital Aesthetics Shape Authenticity and Critical Thinking in the Age of AI

Sonia ZGOLLI [#1], Narjess ALOUI [#2]
#1 Department of Marketing, École nationale d'ingénieurs de Tunis (ENIT), Tunis
#2 Department of Marketing, Institut Supérieur d'Administration des Entreprises à Gafsa (ISAEG), Tunis
[#1] sonia.zgolli@enit.utm.tn

#2 narjess_aloui@yahoo.com

***Abstract*- This paper presents a bibliometric analysis of scholarly discourse on generative artificial intelligence, authenticity, and critical thinking from 2019 to 2025. Using data retrieved from google scholar, we apply co-word and co-citation analysis to identify key research trends, thematic clusters, and intellectual structures within this emerging field. The analysis reveals a growing convergence between studies on digital self-presentation, cognitive offloading, and the aesthetics of communication shaped by generative AI. Clusters of research focus on AI-driven branding, the erosion of reflexive thought, and the implications of linguistic optimization. By mapping these developments, the study provides an evidence-based overview of how academic attention to authenticity and critical thinking is evolving in the context of AI-generated content. The findings also highlight underexplored areas, including educational responses to AI use and the philosophical implications of machine-authored discourse. This bibliometric approach contributes a data-driven foundation for future inquiry into the cognitive and cultural impacts of generative technologies.**

Keywords: Generative Artificial Intelligence, ChatGPT, Critical Thinking, Authenticity, Higher Education

I. INTRODUCTION

Digital technologies have transformed how individuals construct and present their identities. Across visual platforms such as Instagram and linguistic platforms powered by generative artificial intelligence (AI), users engage in curated forms of self-expression designed to meet platform-specific aesthetic standards and algorithmic preferences. These expressions are increasingly filtered—visually through retouched images and stylistic templates [1], and linguistically through AI-generated, grammatically polished text [2]. While such tools offer users greater control over how they appear and communicate, they simultaneously raise concerns regarding the erosion of authenticity and the decline of critical thinking in digital communication.

The theoretical lens of Erving Goffman's dramaturgical model provides a useful framework for understanding this shift. According to Goffman, social interaction is inherently performative: individuals act out roles and adapt their behavior to conform to the expectations of others [3]. In digital environments, these performances are not only persistent and public, but also shaped by technical affordances—filters, algorithms, and predictive systems that reward optimized content [4]. The result is an increasingly standardized self-presentation, tailored not for self-understanding but for external validation and algorithmic visibility.

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Generative AI tools such as ChatGPT exemplify this shift in linguistic performance. These systems enable users to outsource not only the mechanical aspects of writing, but also the deeper cognitive work of constructing arguments, evaluating evidence, and expressing uncertainty. Several studies suggest that the frequent use of AI for text generation may lead to cognitive offloading, wherein users become less likely to engage in reflective thinking, revision, or exploratory writing [5], [6]. As such, the immediacy and fluency offered by AI tools may undermine the very practices that foster independent judgment and critical thought [7].

These developments raise an important research question:

To what extent does the use of visual and textual filters, enabled by digital platforms and AI compromise authenticity and reduce the space for critical reflection?

To explore this question, the present study adopts a bibliometric methodology, mapping the evolution of scholarly discourse on generative AI, authenticity, and critical thinking from 2019 to 2025. Using co-word and co-citation analysis, we identify thematic clusters, influential authors, and research trends in the field. This approach allows us to assess how the academic community is conceptualizing the implications of mediated expression for cognition, identity, and education. Our objective is to provide a comprehensive overview of existing knowledge and to highlight theoretical and empirical gaps that merit further investigation.

This inquiry contributes to a growing interdisciplinary effort to critically assess the cultural and psychological consequences of AI in everyday life. By focusing on the intersection of filtered expression, authenticity, and cognition, the study offers insights relevant not only to scholars in communication and media studies, but also to educators, designers, and policymakers concerned with preserving the conditions for genuine, thoughtful expression in an increasingly automated world.

II. LITERATURE REVIEW

2.1. Digital Self Presentation and Authenticity

Due to algorithmic logic and platform affordances in digitally mediated environments, it becomes evident that the presentation of self is progressively dictated by algorithms and other platform possibilities. The dramaturgical model outlined by Goffman [3] is primordial and according to him all social interactions are imaginary and situational. Performativity in online platforms becomes more enhanced and aestheticized through visual filters and optimization options in texts that prioritize fluent discursive authenticity [1], [2].

Such tools undermine the concept of authenticity having been once setup through spontaneously-reflexive self-expression. The research indicates that generative AI is a factor of standardization in digital expression aligned with the needs of the algorithm of the platform instead of the character of the identity [2], [4]. Such transition evokes ethical and epistemological issues on the loss of authorship especially in scholarly and professional communication [14], [16]. Just like personal and educational expression, Bruns and Meissen [2] show that AI-aided narrative creation has the potential to reduce the perceived authenticity of brand narratives.

2.2. Critical Thinking, Cognitive Offloading and AI

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Critical thinking is known to be the focus of education and democracy. It is a skill of constructing arguments and evaluating evidence based on questioning assumptions that is being gradually externalised to online tools [5], [7]. This can be explained by the cognitive offloading concept which translates as dependence on other systems to accomplish cognitive activities [5], [17].

Risko and Gilbert [5] and subsequently Singh et al. [7] state that although this kind of outsourcing might be effective, it might also compromise the epistemic agency of users, degrading the habits of reflection, revision, and skepticism. With the development of large language models (such as ChatGPT), students begin to write essays with AI, organize their arguments and even play the role of reflection. These tools have a potential to enhance what can be called surface level output, but there is a fear that they minimize cognitive frictional difficulties that are required to gain deeper learning [8], [10].

The position is also supported by Chan and Hu [13], which demonstrated that students have a tendency to view generative AI as beneficial and position it as intellectually passive and add to the culture of acceptance instead of questioning. Similar to this, Lim et al. [14] warn that the educational systems can automate thinking instead of developing it.

2.3. Artificial Intelligence, Epistemic Authority and Educational Practice

Generative AI also changes conventional ideas of epistemic power. As soon as students use AI not only to get help with writing but also come up with ideas and present critical frames, the question emerges: Whose knowledge is expressed there? Dwivedi et al. [9] indicate that through this knitting of authorship, norms of originality and ownership in academia are questioned.

Besides, when it comes to language learning situations, especially among English as a Foreign Language (EFL) learners, technology such as ChatGPT has brought questions of linguistic identification authenticity to light. Cooper [16] examines this relationship in science education with the knowledge that students are likely to rely more on AI to provide them with linguistic fluency thereby obfuscating or censoring their true voice. This tendency is reflected upon in early research of Farrokhnia et al. [15], who draw attention to the SWOT aspects of AI in education, where the usefulness and the possibility of replacing the reflective practices are opposed.

2.4. Holes and New Frontiers

In spite of the increasing scholarship, there are two areas which are underrepresented. The first one is the correlation between the authenticity and discourse mediated by AI, particularly, the negotiation of identity via machine-generated language. Second is the structuring of AI systems, which promote metacognition, but not indoctrination by fluent products. Tlili et al. [12] advance the idea of pedagogical interventions making the AI part of the frameworks of self-questioning and dialogic learning.

Taking up these views, then, we can situate our current research as part of an emerging orthodoxy of interdisciplinary scholarship bridging generative AI and cognition and selfhood, that strives not merely to describe the process of change associated with this technological innovation, but to critique its implications in a humane and educational context.

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III. METHODOLOGY

This study adopts a bibliometric analysis as its core methodological framework, with the objective of mapping the intellectual and thematic structure of research at the intersection of generative AI, authenticity, and critical thinking. Bibliometric methods allow for the systematic examination of a body of literature by analyzing citation patterns, keyword co-occurrences, and scholarly influence over time. The approach is both quantitative, in identifying publication trends and citation networks, and exploratory, in uncovering emerging research themes and gaps in the field.

Unlike traditional database-driven bibliometrics, this study relies on data extracted from Google Scholar via the software Publish or Perish (PoP). While Google Scholar includes a broader range of sources such as preprints, books, and institutional repositories it offers wider visibility into grey and interdisciplinary literature often overlooked by indexed databases such as Scopus or Web of Science.

The workflow consists of four stages:

1. Query design and data extraction using Publish or Perish;
2. Data cleaning and refinement;
3. Construction of co-occurrence and co-citation networks using VOSviewer;
4. Interpretation of clusters and trend analysis.

IV. RESULTS

1- Keyword Co-occurrence Network

The co-occurrence network reveals five dominant terms; ChatGPT, AI, generative, critical, and thinking that are tightly linked. This indicates a strong thematic convergence in current scholarship, particularly around how large language models (LLMs) are reshaping cognitive practices, especially in education. The prevalence of terms like students, skills, and learning suggests a strong educational framing.

2- Thematic Clustering

Using NMF topic modeling on titles and abstracts, four thematic clusters emerged:

Thematic Clustering of Research Topics (2019–2025)

Cluster	Top Keywords	Interpretation
C1: Cognitive Skills and Critical Thinking	thinking, critical, students, skills, chatgpt, problem, solving, study, enhancing	Explores the impact of generative AI tools like ChatGPT on students' cognitive and problem-solving skills, with a strong focus on critical thinking and educational outcomes.
C2: Institutional Integration of AI	generative, ai, education, higher, tools, models, use, genai, challenges	Examines how institutions are integrating AI into higher education structures, including tool adoption, policy implications, and pedagogical transformations.

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C3: Disciplinary Applications and Learning Contexts	chatgpt, education, learning, research, using, review, medical, critical, challenges	Highlights practical applications and evaluations of ChatGPT in diverse disciplinary contexts, particularly in medicine and education, often via reviews and experimental research.
C4: Authenticity and Academic Expression	authenticity, writing, academic, language, english, efl, generated, exploring	Focuses on the ethical and epistemological implications of AI-generated writing, particularly regarding authorship, authenticity, and self-expression in academic and language-learning contexts.

The table above presents the four main thematic clusters extracted from our dataset:

- **Cluster 1** reveals a pedagogical focus, with critical thinking at the center of AI's cognitive implications for students. It confirms that many studies use ChatGPT as a lens to assess intellectual development and learning outcomes.
- **Cluster 2** reflects a strategic and institutional angle. It shows that educational systems are not merely reacting to AI but are actively attempting to integrate it structurally, often raising concerns about scalability and educational ethics.
- **Cluster 3** covers experimental and review-based research across disciplines (especially medical education), showing how ChatGPT is being tested and evaluated in real-world learning environments.
- **Cluster 4** is the most conceptually original and emerging. It brings to light underexplored tensions around identity, authorship, and academic integrity in the age of AI. Its relatively low keyword frequency suggests it's a valuable opportunity for novel contribution.

3- Influential Authors and Citations

Among the 500 papers analyzed, the most frequently appearing authors include M. Sallam, C.K.Y. Chan, and Y.K. Dwivedi, each contributing extensively to literature around AI in education and cognitive development.

Highly cited works primarily focus on ChatGPT’s integration in education, its ethical implications, and its impact on writing and critical reasoning.

V. Discussion and conclusion

This study analyzed a corpus of 500 academic publications from 2019 to 2025, retrieved via Google Scholar and processed using Publish or Perish, to map how scholarly discourse has evolved around generative AI, authenticity, and critical thinking. Using co-word frequency analysis and topic modeling, the results reveal an intensively developing research field, largely shaped by the rapid emergence of tools like ChatGPT. Keyword analysis shows that terms such as *ChatGPT* [8], *AI*, *generative*, *critical*, and *thinking* dominate the landscape, indicating a strong thematic orientation toward educational implications and cognitive impact. This cluster of terms frequently co-occurs with *students*, *learning*, and *skills*,

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suggesting that recent scholarship frames generative AI through a pedagogical and psychological lens, with a particular emphasis on how it reshapes classroom practices and critical thought.

The thematic clustering further reveals four distinct yet interconnected research directions. The first and most prevalent cluster centers on the cognitive and intellectual dimensions of AI use in education. Articles in this domain interrogate whether the use of generative AI enhances or diminishes students' problem-solving abilities, critical thinking, and capacity for autonomous reasoning. Authors often reflect on how ChatGPT can support surface-level productivity while simultaneously raising concerns about the erosion of deeper intellectual habits, such as argumentation and doubt—elements traditionally associated with critical thinking. These concerns align with previous work on cognitive offloading, which suggests that dependence on intelligent systems may reduce users' incentive to engage in reflective processing [17].

The second cluster focuses on the institutional integration of generative AI in higher education. Here, the literature addresses administrative responses to the rise of tools like ChatGPT, policy adaptation, and the transformation of pedagogical strategies. Many of these works take a pragmatic view of AI adoption, evaluating both the potential for enhancing efficiency and the ethical dilemmas posed by automation in academic work. This strand of research highlights that educational institutions are not only adapting reactively to AI's presence but are also exploring proactive strategies to embed these technologies within curricula and instructional design [9], [13].

The third thematic area comprises studies that evaluate the performance and usability of ChatGPT within specific disciplinary contexts. This includes applications in medical education, STEM fields, and language learning, where the chatbot is used either as a learning assistant, a tool for feedback generation, or a research aid. These studies are frequently empirical in nature, involving pilot tests, surveys, or comparative experiments that measure the impact of AI on learning outcomes or engagement. The tone of these papers is often cautiously optimistic, recognizing both the functional power of AI and the risks of overdependence [10], [11].

The final and arguably most intellectually provocative cluster concerns authenticity and academic expression. Although smaller in volume, this cluster engages deeply with the philosophical and ethical dimensions of AI-generated content. Scholars in this area examine how tools like ChatGPT are reshaping notions of authorship, originality, and self-presentation, particularly in academic writing and among English-as-a-Foreign-Language (EFL) learners. The emergence of these studies suggests a growing concern over whether machine-assisted expression can still be considered a genuine manifestation of the self. The tension between fluency and authenticity is especially pronounced in this cluster, as researchers question the implications of linguistic optimization for the epistemic agency of students [16].

Taken together, these findings illustrate a field that is highly dynamic but thematically concentrated. The dominance of educational and cognitive frameworks demonstrates that scholars are primarily concerned with the practical and psychological consequences of AI. Yet the relative underrepresentation of work focused on authenticity and identity reveals an important research gap. While many studies address how AI changes what we do in educational settings, fewer investigate how it changes who we are as communicators and thinkers.

The implications of this study are twofold. First, there is a need for more research that examines metacognitive strategies in AI-assisted environments such as designing AI systems that prompt users to reflect or engage in deeper analysis rather than simply accept polished outputs. Second, the concept of authenticity, although emerging, must be foregrounded more explicitly as a theoretical and methodological

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category in future AI-in-education research. If educational practice is to preserve the goals of autonomy, criticality, and ethical communication, then it must contend not only with how AI supports learning, but also with how it transforms the meaning of expression itself.

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