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Generative AI, Academic Writing, and Intellectual Formation in Architecture and Urbanism

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IA generativa, escrita acadêmica e formação intelectual em Arquitetura e Urbanismo

RESUMO

Objetivo – O artigo analisa os impactos da Inteligência Artificial generativa na formação universitária em Arquitetura e Urbanismo, com ênfase na escrita acadêmica como prática de construção do pensamento, discutindo como a mediação algorítmica tensiona a autoria intelectual, a integridade acadêmica e os fundamentos epistemológicos da formação crítica.

Metodologia – Adota-se uma abordagem qualitativa de natureza teórico-crítica, baseada em revisão bibliográfica nacional e internacional sobre Inteligência Artificial no ensino superior, escrita acadêmica, ética, avaliação universitária e colonialidade do saber, estruturando a análise em eixos temáticos articulados.

Originalidade/relevância – O estudo insere-se na lacuna de pesquisas que problematizam a IA não apenas como ferramenta técnica, mas como mediação epistemológica na formação em Arquitetura e Urbanismo, contribuindo para o debate crítico ao deslocar o foco da eficiência tecnológica para as implicações formativas, éticas e políticas do uso dessas tecnologias.

Resultados – Os resultados indicam que o uso acrítico da IA generativa favorece a produção de textos formalmente adequados, porém desvinculados de processos efetivos de elaboração conceitual, fragilizando a autoria, a responsabilização intelectual e a função formativa da escrita, além de reforçar hierarquias epistemológicas e comprometer a avaliação universitária.

Contribuições teóricas/metodológicas – O artigo contribui ao propor uma leitura da IA como artefato epistemológico e político, articulando os debates sobre escrita acadêmica, ética e colonialidade do saber, e ao sugerir a necessidade de reconfiguração das práticas avaliativas e pedagógicas no ensino superior.

Contribuições sociais e ambientais – Ao problematizar os efeitos da IA na formação de arquitetos e urbanistas, o estudo aponta implicações diretas na capacidade desses profissionais de interpretar criticamente o território e intervir de forma responsável no espaço urbano, destacando a importância da formação crítica para enfrentar desigualdades socioespaciais e desafios contemporâneos.

PALAVRAS-CHAVE: Inteligência Artificial generativa, Escrita acadêmica, Arquitetura e Urbanismo

Generative AI, Academic Writing, and Intellectual Formation in Architecture and Urbanism

ABSTRACT

Objective – This article analyzes the impacts of generative Artificial Intelligence on university education in Architecture and Urbanism, with an emphasis on academic writing as a practice of constructing thought. It examines how algorithmic mediation challenges intellectual authorship, academic integrity, and the epistemological foundations of critical education.

Methodology – A qualitative, theoretical-critical approach is adopted, based on a review of national and international literature on Artificial Intelligence in higher education, academic writing, ethics, university assessment, and the coloniality of knowledge, structuring the analysis into articulated thematic axes.

Originality/Relevance – The study addresses a gap in the literature by problematizing AI not merely as a technical tool, but as an epistemological mediation in the education of Architecture and Urbanism, contributing to critical debate by shifting the focus from technological efficiency to the formative, ethical, and political implications of these technologies.

Results – The findings indicate that the uncritical use of generative AI promotes the production of formally adequate texts that are disconnected from effective processes of conceptual development, weakening authorship, intellectual accountability, and the formative function of writing, while reinforcing epistemological hierarchies and undermining university assessment.

Theoretical/Methodological Contributions – The article contributes by proposing an interpretation of AI as an epistemological and political artifact, articulating debates on academic writing, ethics, and the

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ISSN 2675-7524 - v. 7, n. 27, 2026

coloniality of knowledge, and by suggesting the need to reconfigure assessment and pedagogical practices in higher education.
Social and Environmental Contributions – By problematizing the effects of AI on the education of architects and urban planners, the study highlights direct implications for their ability to critically interpret territory and intervene responsibly in urban space, emphasizing the importance of critical education in addressing socio-spatial inequalities and contemporary challenges.

KEYWORDS: Generative Artificial Intelligence, Academic Writing, Architecture and Urbanism

IA generativa, escritura académica y formación intelectual en Arquitectura y Urbanismo

RESUMEN
Objetivo – El artículo analiza los impactos de la Inteligencia Artificial generativa en la formación universitaria en Arquitectura y Urbanismo, con énfasis en la escritura académica como práctica de construcción del pensamiento, discutiendo cómo la mediación algorítmica tensiona la autoría intelectual, la integridad académica y los fundamentos epistemológicos de la formación crítica.
Metodología – Se adopta un enfoque cualitativo de naturaleza teórico-crítica, basado en revisión bibliográfica nacional e internacional sobre Inteligencia Artificial en la educación superior, escritura académica, ética, evaluación universitaria y colonialidad del saber, organizado en ejes analíticos articulados.
Originalidad/relevancia – El estudio se inserta en una brecha teórica al problematizar la IA no solo como herramienta técnica, sino como mediación epistemológica en la formación en Arquitectura y Urbanismo, contribuyendo al debate crítico al desplazar el enfoque de la eficiencia tecnológica hacia sus implicaciones formativas, éticas y políticas.
Resultados – Los resultados indican que el uso acrítico de la IA generativa favorece la producción de textos formalmente adecuados, pero desvinculados de procesos efectivos de elaboración conceptual, debilitando la autoría, la responsabilidad intelectual y la función formativa de la escritura, además de reforzar jerarquías epistemológicas y afectar la evaluación académica.
Contribuciones teóricas/metodológicas – El artículo contribuye al proponer una lectura de la IA como artefacto epistemológico y político, articulando debates sobre escritura académica, ética y colonialidad del saber, y sugiriendo la necesidad de reconfigurar las prácticas pedagógicas y evaluativas en la educación superior.
Contribuciones sociales y ambientales – Al analizar los efectos de la IA en la formación de arquitectos y urbanistas, el estudio destaca implicaciones en su capacidad de interpretar críticamente e intervenir responsablemente en el espacio urbano, subrayando la importancia de una formación crítica para enfrentar desigualdades socioespaciales y desafíos contemporáneos.

PALABRAS CLAVE: Inteligencia Artificial generativa, Escritura académica, Arquitectura y Urbanismo

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1. INTRODUCTION

The incorporation of Artificial Intelligence (AI) in higher education has intensified rapidly in recent years, particularly with the diffusion of generative AI systems capable of producing texts, structuring arguments, and synthesizing academic content. This process has been widely accompanied by institutional discourses that associate such technologies with innovation, efficiency, and the modernization of educational practices, often presenting AI as an inevitable response to contemporary transformations in the university (Selwyn, 2016; 2019). However, as Williamson, Eynon, and Potter (2020) warn, the speed of this incorporation has surpassed the critical capacity of higher education institutions to reflect on its formative, epistemological, and ethical effects.

In the field of Architecture and Urbanism, the introduction of AI occurs unevenly and is largely guided by a technical-instrumental rationality that has historically accompanied the digitalization of the discipline. As Carpo (2011; 2017) argues, the incorporation of computational technologies in architecture has been associated with the expansion of technical capacities and the optimization of design processes, shifting the educational debate toward parameters of performance, productivity, and formal innovation. With generative AI, this movement deepens, as the technology begins to affect not only the project as a technical object, but also the discursive production that underpins it, acting directly on academic writing and conceptual development (Carpo, 2023; Leach, 2022).

Architecture and Urbanism, however, cannot be understood as fields of education restricted to the mastery of tools and operational procedures. These are areas whose specificity lies in the articulation between design, theory, and critique, in which academic writing plays a central formative role. As Emig (1977) and Larrosa (2002) argue, university writing constitutes a practice of constructing thought, through which students organize concepts, sustain arguments, and develop critical positions. In the context of Architecture and Urbanism, this dimension is particularly evident in undergraduate research and final graduation projects, where text and design are inseparably articulated (Leach, 2022).

Algorithmic mediation of writing and bibliographic production, therefore, cannot be understood as a merely instrumental issue. By affecting practices of reading, synthesis, argumentation, and authorship, generative AI directly impacts the pedagogical and epistemological foundations of university education.

This article is based on the hypothesis that the uncritical use of generative AI in the teaching of Architecture and Urbanism tends to displace central formative processes, weakening intellectual authorship, academic integrity, and traditional criteria of university assessment. It is argued that, by mediating academic writing associated with

ISSN 2675-7524 - v. 7, n. 27, 2026

research and the conceptual grounding of design, AI challenges the very meaning of university education in the field, bringing it closer to a logic of operational training, to the detriment of the construction of critical thinking (Selwyn, 2016; 2019).

From a methodological standpoint, the article adopts a qualitative, theoretical-critical approach, based on a bibliographic review of national and international literature on Artificial Intelligence in higher education, academic writing, ethics, university assessment, and the coloniality of knowledge. The analysis is organized into thematic axes that discuss the technocratic consensus surrounding AI, its impacts on education in Architecture and Urbanism, the ethical implications of writing mediated by generative systems, and the effects of this process on assessment and academic integrity, culminating in the proposal of a situated ethics for the use of AI in university education.

2. THE TECHNOCRATIC CONSENSUS: WHEN CRITIQUE IS REPLACED BY EFFICIENCY

The incorporation of Artificial Intelligence in higher education has been largely guided by a technocratic consensus that tends to present these technologies as inevitable solutions to the contemporary challenges faced by universities (Silva et al., 2025). Within this framework, AI is primarily mobilized through promises of efficiency, innovation, and process optimization, and is rarely problematized as an epistemological mediation that affects the modes of knowledge production and formative processes (Selwyn, 2016; 2019). This consensus is not limited to the educational field but is part of a broader rationality that associates technological progress with the automatic improvement of institutional practices, displacing critical debate about the purposes, values, and social implications of these technologies.

In the field of Architecture and Urbanism, this rationality finds fertile ground due to the long-standing association between technological innovation and transformations in design practice. As Carpo (2011) demonstrates, the processes of digitalization in architecture have historically redefined not only design tools but also the criteria of professional and academic legitimacy, promoting a gradual valorization of technique as the normative horizon of education. In what Carpo (2017) calls the "second digital turn," architecture becomes increasingly oriented by algorithmic logics, in which performance, parametrization, and automation assume centrality, often at the expense of critical reflection on the conceptual foundations of design.

The emergence of generative AI deepens this movement by shifting technological intervention beyond the formal or operational dimensions of design, directly affecting the discursive production that underpins it. Unlike previous digital tools, generative AI acts upon academic writing, argumentative organization, and theoretical synthesis—core elements of university education. As Carpo (2023) observes,

ISSN 2675-7524 - v. 7, n. 27, 2026

by simulating processes of intelligence and creativity, AI not only automates tasks but also reconfigures the very understanding of authorship, decision-making, and intellectual responsibility within the field of architecture.

Despite this qualitative shift, much of the literature addressing AI in Architecture and Urbanism remains focused on its technical and operational benefits. Studies and case reports emphasize the expansion of formal repertoires, the acceleration of design stages, and the multiplication of solution alternatives, often without critically examining the impacts of these tools on students' critical formation and on knowledge construction processes (Leach, 2022). This approach reinforces an artificial separation between design and writing, as if the former were the legitimate space of creation and the latter merely a device for documentation or subsequent justification.

Such a separation is epistemologically problematic. As studies on academic formation and writing in higher education indicate, writing is not an ancillary stage of the learning process but a central practice of thought construction and meaning-making (Emig, 1977; Bondía, 2002). In the context of Architecture and Urbanism, academic writing organizes problems, articulates concepts, and confers intelligibility to design decisions, constituting an inseparable part of the design process itself. By treating writing as a secondary or easily automatable dimension, the technocratic discourse contributes to emptying its formative and epistemological function.

This shift can be understood in light of what Selwyn (2016; 2019) defines as technological solutionism: the tendency to reduce complex educational problems to technical solutions, thereby avoiding critical examination of their structural causes and their effects on intellectual formation. Instead of addressing the fundamental formative question—what kind of professional and researcher should be trained—the debate shifts toward operational concerns, such as how best to use the technology or integrate it into academic workflows. In this process, efficiency becomes the privileged criterion of evaluation, obscuring the ethical, epistemological, and pedagogical dimensions of higher education.

In the context of undergraduate research, academic production, and final graduation projects, the effects of this technocratic consensus become even more evident. In these instances, academic writing is not limited to the presentation of results but constitutes a privileged space of learning, where students formulate research problems, engage with the literature, and theoretically justify their design choices. When generative AI is used to structure texts, produce syntheses, or suggest references without critical reflection, this process tends to shift toward a logic of producing efficient texts, weakening its formative dimension and disconnecting writing from the intellectual experience that should underpin it (Emig, 1977; Selwyn, 2016; 2019).

ISSN 2675-7524 - v. 7, n. 27, 2026

Thus, structural silences can be observed in the literature on the use of Artificial Intelligence in Architecture and Urbanism. While studies focused on process optimization and formal innovation proliferate, issues related to intellectual authorship, academic integrity, and the effects of discursive automation on critical formation remain underexplored. By avoiding this debate, the technocratic consensus contributes to the naturalization of a technical-instrumental rationality that displaces writing from the realm of reflection and learning to a logic of productivity and performance, in tension with principles widely defended in contemporary debates on ethics, authorship, and academic responsibility (Floridi, 2023).

Therefore, the uncritical incorporation of AI in the teaching of Architecture and Urbanism should not be understood merely as an instrumental or methodological issue, but as a central formative and epistemological problem.

3. ARCHITECTURE AND URBANISM: CRITICAL EDUCATION OR OPERATIONAL TRAINING?

University education in Architecture and Urbanism has not historically been constituted as mere technical training aimed at mastering tools and operational procedures. Rather, it is a field of knowledge whose specificity lies in the articulation between design, theory, and critique, requiring students to develop the ability to interpret contexts, formulate problems, construct arguments, and conceptually support their decisions (Leach, 2022). From this perspective, technique—although central—is not an end in itself, but a means subordinated to conceptual elaboration and critical thinking that guide design practice.

This characteristic is particularly evident in the relationship between design and academic writing. In Architecture and Urbanism programs, writing is not limited to a peripheral or strictly evaluative exercise, but is integrated into research and design processes, especially in undergraduate research, report writing, article production, and final graduation projects. These formative devices require students to mobilize theoretical references, construct analytical categories, and make explicit the conceptual foundations that guide their proposals, articulating text and design as inseparable dimensions of the educational process (Carpo, 2017).

From an epistemological standpoint, academic writing operates as a practice of constructing thought. As Emig (1977) argues, writing constitutes a way of learning, as it involves complex cognitive operations of analysis, synthesis, and reflection. This understanding is deepened by Bondía (2002), who highlights that university writing entails experiencing doubt, time, and intellectual effort—elements that are indispensable for critical formation and the development of responsible intellectual

ISSN 2675-7524 - v. 7, n. 27, 2026

authorship. In the context of Architecture and Urbanism, writing does not merely explain the project, but conceptually elaborates the act of designing itself.

The introduction of generative Artificial Intelligence in higher education directly challenges this formative logic. With the widespread dissemination of systems capable of producing coherent academic texts, theoretical summaries, and complete argumentative structures, a qualitative transformation can be observed in the relationship between writing and learning. Unlike previous educational technologies, generative AI does not merely assist peripheral stages of academic work, but begins to simulate the very core of intellectual activity, producing texts that display an appearance of conceptual and argumentative mastery (Floridi, 2023).

In Architecture and Urbanism education, this issue takes on specific contours. Empirical studies indicate that the use of AI may enhance technical performance in specific tasks, such as calculations or objective responses, but does not ensure deep conceptual understanding in the absence of pedagogical mediation (Gruenhagen et al., 2024). In recent experiences within the field of architecture, it has been observed that AI tools applied to design can rapidly expand students' visual and formal repertoires, while simultaneously making it more difficult to articulate the theoretical basis of their choices, weakening the relationship between form, concept, and argument (Alves; Trujillo, 2025).

These findings suggest that AI tends to favor the production of formally adequate and discursively fluent outputs that are nonetheless epistemologically fragile. Such content has not undergone the traditional filters of academic formation—direct engagement with sources, confrontation of interpretations, conceptual validation, and argumentative responsibility—yet circulates as if it were consolidated knowledge. In undergraduate contexts, where students are still building theoretical repertoires and evaluative criteria, the risk extends beyond occasional errors to the normalization of error and superficiality as legitimate knowledge (Selwyn, 2019).

In this scenario, academic writing ceases to function as a space for the elaboration of thought and instead becomes an automated product, bringing the university experience closer to a logic of operational training. Students learn to formulate prompts, adjust form, and obtain efficient texts, but not necessarily to understand concepts, sustain arguments, or assume intellectual responsibility for what they write. As Selwyn (2016; 2019) argues, this productivist rationality silently redefines the meaning of learning in higher education, shifting the focus from critical formation to the achievement of immediate results.

The question that arises, therefore, is central to Architecture and Urbanism as an academic field: what remains of critical education when students, still in the process of consolidating theoretical knowledge, begin to rely on systems capable of producing

ISSN 2675-7524 - v. 7, n. 27, 2026

plausible yet potentially incorrect texts, without effective means of verification? If writing ceases to be an exercise in thinking and becomes the consumption of algorithmic outputs, the university risks producing professionals who are technically skilled but intellectually weakened in their ability to understand, critique, and intervene in the complexity of contemporary urban and territorial space (Floridi, 2023; Selwyn, 2019).

Thus, the tension between critical education and operational training does not constitute an abstract dilemma, but a concrete problem within Architecture and Urbanism education in the context of generative AI. Preserving the centrality of academic writing as a practice of thought, and of theoretical reflection as the foundation of design, requires resisting the reduction of university education to a set of technical competencies and reaffirming the role of the university as a space for the critical elaboration of knowledge.

4. ETHICS OF AI-MEDIATED ACADEMIC WRITING

The incorporation of generative Artificial Intelligence into academic writing imposes a substantive shift in the debate on university ethics. Unlike traditional writing support tools—such as spell checkers, text editors, or reference managers—generative AI acts directly on the core of intellectual activity, being capable of structuring arguments, formulating conceptual syntheses, and suggesting bibliographic references. Under these conditions, the technology ceases to function merely as an auxiliary instrument and, in many cases, begins to assume functions that have historically constituted the core of academic education, thereby challenging notions of authorship, intellectual responsibility, and scientific integrity (Floridi, 2023; WAME, 2023).

This shift cannot be understood solely as a technical or methodological issue. By taking over central tasks in the writing process—argumentative organization, conceptual elaboration, and theoretical articulation—generative AI introduces a form of outsourcing of thought, in which the student appropriates a text that does not result from their own intellectual trajectory as if it were entirely their own. Even when there is editing or adaptation of generated content, such mediation does not equate to academic authorship in the strict sense, which presupposes full responsibility for theoretical choices, claims made, and meanings produced in the text (COPE Council, 2023).

From an ethical standpoint, this scenario produces structural implications. The first concerns the dilution of intellectual authorship. Academic writing ceases to be the expression of an identifiable cognitive process and becomes a hybrid product whose origin is not made explicit. As Floridi (2023) observes, generative AI systems operate without semantic understanding and without commitment to truth, thereby breaking the traditional relationship between textual production and moral responsibility. When

ISSN 2675-7524 - v. 7, n. 27, 2026

texts generated by these systems circulate as the student's own work, authorship becomes an institutionally tolerated fiction, emptying its formative meaning.

The second implication concerns the weakening of intellectual accountability. Academic ethics is grounded in the principle that every author is responsible for what they assert—conceptually, methodologically, and empirically. However, recent literature demonstrates that generative AI systems exhibit a high incidence of factual and conceptual errors, as well as fabricated references, a phenomenon known as *hallucination* (algorithmic hallucination) (Rawte et al., 2023; Huang et al., 2025).

The third implication relates to the simulation of academic competence. Generative AI produces formally sophisticated texts, with technical vocabulary and argumentative structures aligned with academic standards, creating the appearance of conceptual mastery even when such mastery is not effectively present. Empirical studies indicate that this effect is particularly significant among early-stage students, who still lack the theoretical repertoire and consolidated criteria to critically evaluate the content produced (Van Niekerk; Delport; Sutherland, 2024). Under these conditions, writing ceases to function as evidence of learning and instead becomes evidence of access to the tool.

In the field of Architecture and Urbanism, these issues take on even more delicate contours. Academic writing constitutes an inseparable part of critical education and of the ability to conceptually justify design and analytical decisions. The appropriation of AI-generated texts as if they were one's own compromises not only the individual ethics of the student but also the formative pact that underpins university assessment. Evaluating a text presupposes evaluating a subject in formation; when that text does not result from the student's intellectual work, the assessment process loses its epistemological basis and its pedagogical function (Alkouk; Khlaif, 2024).

In light of this scenario, the ethics of AI-mediated academic writing cannot be reduced to instrumental debates about plagiarism or to simplistic dichotomies between permitted and prohibited use. It is a moral, epistemological, and institutional issue that requires rethinking the criteria of authorship, responsibility, and transparency in the production of academic knowledge. As Selwyn (2016; 2019) argues, the central problem of AI in education is not technological but political, as it concerns the values that shape what is understood as learning, teaching, and knowledge production in higher education.

In this context, the role of institutions and faculty becomes central. It is not reasonable to transfer to students—especially undergraduate students—the sole responsibility for deciding how, when, and to what extent to use generative AI systems. Universities must establish clear guidelines for use, require transparency in algorithmic mediation, and reinforce practices of intellectual supervision, in which the produced text

ISSN 2675-7524 - v. 7, n. 27, 2026

is continuously confronted with the student's ability to explain concepts, justify choices, and sustain arguments, both in writing and in the oral defense of projects and research (Unesco, 2023).

Without such supervision, there is a risk of naturalizing a form of academic production in which texts circulate without effective intellectual authorship, errors are reproduced as knowledge, and critical education is progressively replaced by formal performance. Defending an ethics of AI-mediated academic writing, therefore, does not imply rejecting the technology, but reaffirming that thinking, writing, and taking responsibility for what is written remain non-transferable human responsibilities within the university, especially in fields such as Architecture and Urbanism, where theory, design, and intellectual authorship remain inseparable.

5. THE MYTH OF ALGORITHMIC NEUTRALITY

One of the most recurrent arguments in the diffusion of Artificial Intelligence in higher education is that of its supposed technical neutrality. AI is often presented as an objective, efficient, and universal tool, capable of organizing information, expanding repertoires, and supporting knowledge production in an impartial manner. However, a vast body of critical literature has demonstrated that algorithms are not neutral: they are trained, calibrated, and validated based on datasets, relevance criteria, and epistemological models that are historically situated, reflecting power disputes, academic hierarchies, and geopolitical asymmetries (Noble, 2018; Birhane et al., 2021; Floridi, 2023).

In the case of generative AI, this lack of neutrality takes on even more sensitive contours. Large-scale language systems are predominantly trained on corpora produced in the Global North, with a strong predominance of the English language, journals indexed in hegemonic databases, and academic traditions consolidated in European and North American universities. As demonstrated by Noble (2018) and Birhane et al. (2021), these systems tend to reproduce and amplify existing racial, cultural, and epistemological hierarchies, naturalizing them under the appearance of computational objectivity and technical efficiency.

From an epistemological standpoint, this means that AI operates based on a specific selection of what is recognized as legitimate knowledge. Authors, concepts, and approaches that do not circulate widely in indexed international databases, that are not available in English, or that belong to peripheral critical traditions tend to be underrepresented, fragmented, or rendered invisible. As Costanza-Chock (2020) observes, digital technologies often reinforce interconnected systems of inequality by

ISSN 2675-7524 - v. 7, n. 27, 2026

privileging dominant narratives while marginalizing situated, community-based, and counter-hegemonic forms of knowledge.

This process directly relates to what Quijano (2005) defined as the coloniality of knowledge: the persistence of epistemological hierarchies that classify knowledge according to its geopolitical, racial, and cultural origins, even after the formal end of colonialism. The specificity of generative AI does not lie in creating these hierarchies, but in translating them into a computational language that makes them more opaque, automated, and difficult to contest. By presenting outputs as "neutral" or "comprehensive" syntheses, AI masks the fact that it operates through implicit epistemological choices, guided by historically produced criteria of visibility and relevance (Mignolo, 2011; Floridi, 2023).

In the field of academic production, the algorithmic mediation of writing and research contributes to the invisibilization of Latin American, African, and other peripheral authors, reinforcing already consolidated canons and narrowing students' bibliographic horizons. Critical epistemologies—such as decolonial, feminist, Indigenous, or Afro-diasporic approaches—tend to appear in residual or decontextualized ways, when they are not simply omitted. At the same time, the hegemony of a "universal academic English" is consolidated, not only as a language but as a way of structuring arguments, formulating problems, and validating knowledge (Quijano, 2005; Mignolo, 2011).

In the field of Architecture and Urbanism, these implications become particularly evident. These are areas deeply dependent on local contexts, situated practices, and cultural interpretations of space. The academic production that underpins design—whether in undergraduate research, research reports, or final graduation projects—requires engagement with specific territorial realities, historical processes, and concrete socio-spatial conflicts. When AI begins to mediate academic writing, bibliographic selection, and conceptual formulation, a progressive erasure of situated knowledge can be observed, especially that which addresses peripheral urbanization, informality, self-construction, and subaltern territorialities (Costanza-Chock, 2020).

In its place, globally recognized references are reinforced, often presented as universal and disconnected from Latin American realities. This process not only impoverishes academic research but also directly affects design, as the concepts mobilized to justify architectural approaches and design choices begin to reproduce homogenizing perspectives that are insufficiently sensitive to territorial, social, and cultural specificities. As Leach (2022) warns, the automation of design thinking tends to produce formally sophisticated responses that are conceptually detached from context.

Furthermore, algorithmic mediation contributes to the homogenization of academic discourse in Architecture and Urbanism. Texts begin to share similar

ISSN 2675-7524 - v. 7, n. 27, 2026

structures, standardized vocabulary, and recurring forms of argumentation, reducing the diversity of styles, approaches, and theoretical positions. This phenomenon fosters an aestheticization of thought, in which discursive fluency and formal correctness are mistaken for theoretical depth and critical rigor, shifting the focus from conceptual elaboration to the appearance of the text (Selwyn, 2016; 2019).

Thus, it is argued that generative AI operates as a new instance of the coloniality of knowledge, not by introducing unprecedented biases, but by automating and amplifying historically consolidated epistemological hierarchies. By mediating academic production without making explicit its criteria of selection, exclusion, and hierarchization, AI reinforces inequalities in access to scientific visibility and in the definition of what is recognized as valid knowledge within the university (Quijano, 2005; Floridi, 2023).

Recognizing the myth of algorithmic neutrality is therefore a necessary condition for any ethically responsible use of AI in the teaching of Architecture and Urbanism. This does not imply rejecting the technology, but understanding it as a political and epistemological artifact, whose uncritical incorporation tends to deepen existing asymmetries. Defending epistemological plurality, the centrality of situated knowledge, and the diversity of ways of thinking and designing space necessarily involves questioning the role of AI as a supposedly neutral mediator of academic knowledge production.

6. HIGHER EDUCATION, ASSESSMENT, AND ACADEMIC INTEGRITY

The dissemination of generative Artificial Intelligence in higher education does not affect academic writing merely as a technique, but shifts the very foundations of what universities consider assessable: authorship, evidence of learning, and the validity of assessment instruments. In its classical form, university assessment presupposes a correspondence—albeit imperfect—between the work presented and the student's intellectual trajectory. When systems capable of producing complete and discursively convincing texts are used in evaluative activities, this correspondence becomes opaque, weakening the pedagogical and certifying functions of assessment (Selwyn, 2016; 2019).

In the field of Architecture and Urbanism, this issue takes on specific contours. Assessment traditionally articulates technical, conceptual, and critical dimensions, in which written assignments, research reports, descriptive memorials, and project justifications are analyzed not merely as textual products, but as evidence of the reflective process underlying design decisions. As Alkouk and Khlaif (2024) emphasize, assessment in higher education fulfills a formative function when it allows access to how

ISSN 2675-7524 - v. 7, n. 27, 2026

the student thinks, interprets problems, and constructs knowledge, rather than focusing solely on the final result presented.

The mediation of writing by generative AI directly challenges this logic. When texts of conceptual and theoretical grounding begin to be produced, partially or entirely, by algorithmic systems, the text ceases to be a reliable indicator of the student's intellectual authorship. Assessment may then come to mean evaluating the student's ability to access, edit, and formally adapt algorithmic outputs, rather than their conceptual understanding or intellectual maturity (Evangelista, 2025; Bittle; El-Gayar, 2025).

Recent empirical research indicates that this shift is already perceived by students themselves. In a study conducted at Australian universities, Gruenhagen et al. (2024) demonstrate that a significant proportion of students use chatbots to "assist" in assessments, and that many do not identify this practice as a violation of academic integrity. This finding reveals a cultural transformation in the understanding of what counts as authorship, intellectual effort, and academic work. In the context of Architecture and Urbanism, this shift becomes evident when students begin to perceive the theoretical foundation text as a merely formal stage of the project—one that can be outsourced—rather than as a constitutive part of the design process.

From a pedagogical perspective, this scenario poses significant challenges. If the text ceases to function as a reliable indicator of learning, traditional assessment instruments become insufficient. As Alkouk and Khlaif (2024) argue, the presence of generative AI requires the redesign of assessment practices in order to prioritize processes, decision-making traces, explicit reasoning, and the demonstration of higher-order competencies, such as critical thinking, creativity, and argumentative capacity. Assessments focused exclusively on the final product tend to lose their formative function in contexts of extensive algorithmic mediation.

In Architecture and Urbanism, this need for reconfiguration resonates with already established assessment practices, such as juries, oral defenses, and public project presentations. In these settings, evaluation is not limited to the analysis of graphic outputs or written texts, but involves the student's ability to conceptually justify their choices, engage with theoretical references, and respond critically to questioning. When academic writing is mediated by AI without transparency, the evaluation panel loses access to the intellectual trajectory that should be assessed, thereby compromising the legitimacy of the process (Alkouk; Khlaif, 2024).

In this context, the institutional response cannot be limited to the promise of technical detection of AI use, as recent literature points to significant limitations of such systems and the risks of false accusations. The debate therefore shifts from surveillance to redefining what is required from students. Qualitative studies indicate that

ISSN 2675-7524 - v. 7, n. 27, 2026

assessments requiring explicit reflection on choices, processes, and tool use produce more consistent evidence of learning and foster ethical debate about algorithmic mediation (Foung; Lin; Chen, 2024; Alkouk; Khlaif, 2024).

From an institutional standpoint, international documents acknowledge that the speed of generative AI diffusion has surpassed the regulatory capacity of universities. UNESCO (2023) guidelines emphasize the need for a human-centered approach, guided by principles of transparency, responsibility, and pedagogical supervision, as opposed to purely technical or punitive responses. This perspective aligns with critiques that defend the centrality of intellectual formation and academic integrity as foundational values of higher education (Selwyn, 2016; 2019).

Thus, the problem of academic integrity under the mediation of generative AI proves to be structural and transversal. It silently reorganizes the moral economy of university assessment, rendering traditional criteria based on presumed authorship and the text as direct evidence of learning insufficient. For Architecture and Urbanism, a field in which critical thinking, conceptual justification, and interpretive creativity are central dimensions of education, the consequences are particularly significant. If assessment ceases to capture the student's ability to sustain decisions, interpret problems, and articulate concepts, academic certification risks legitimizing only apparent competencies.

In this sense, a consistent response to the presence of AI in higher education does not lie in rejecting the technology, but in the conscious redesign of assessment practices in order to recover the core of the university's pedagogical pact: to evaluate who thinks, how they think, based on which references, and with what intellectual responsibility—both in the text and in the project it supports.

7. FINAL CONSIDERATIONS

The analysis developed throughout this article sought to shift the debate on the incorporation of Artificial Intelligence in the teaching of Architecture and Urbanism from a predominantly technical approach to a reflection of an epistemological, ethical, and pedagogical nature. It was argued that the growing presence of AI—especially generative AI—is not limited to the introduction of new tools into academic practice, but produces significant transformations in processes of writing, authorship, assessment, and, more broadly, in the very meaning of university education (Selwyn, 2016; 2019).

In Architecture and Urbanism programs, these transformations are particularly significant, since academic education has historically been structured around the articulation between design, theory, and critique. As demonstrated, academic writing is

ISSN 2675-7524 - v. 7, n. 27, 2026

not a secondary formal requirement, but a constitutive practice of the educational process, through which students develop concepts, justify design decisions, and construct critical interpretations of urban and territorial space (Emig, 1977; Bondía, 2002). The algorithmic mediation of writing directly affects this formative core, challenging the relationship between thought, authorship, and intellectual responsibility.

Throughout the article, it was shown that the uncritical incorporation of AI tends to reinforce a technical-instrumental rationality already present in higher education, bringing university education closer to a logic of operational training oriented toward efficiency, productivity, and formal performance (Carpo, 2017; Selwyn, 2016; 2019). In the field of Architecture and Urbanism, this rationality is expressed in the valorization of formally sophisticated textual and design outputs, which are not always supported by effective processes of conceptual elaboration, thereby weakening students' critical formation and reflective capacity.

Another central axis of the analysis was the problematization of the ethics of AI-mediated academic writing. It was argued that the use of generative systems to structure texts, synthesize arguments, or suggest references introduces forms of outsourcing of thought that compromise intellectual authorship and academic integrity. As discussed, the production of texts that appear to demonstrate conceptual mastery but are disconnected from the student's intellectual trajectory transforms writing into a simulation of competence, emptying its role as evidence of learning (Floridi, 2023).

The critique of algorithmic neutrality made it possible to demonstrate that AI does not operate as an impartial tool, but as a political and epistemological artifact, trained on datasets and relevance criteria that reproduce academic and geopolitical hierarchies. By mediating the production of academic knowledge, AI tends to reinforce hegemonic canons and to render invisible situated forms of knowledge, especially those produced in peripheral and Latin American contexts, thereby updating forms of coloniality of knowledge under the appearance of technical objectivity (Quijano, 2005; Mignolo, 2011; Noble, 2018).

In the context of university assessment, it was demonstrated that the presence of generative AI weakens traditional criteria based on presumed authorship and on the text as direct evidence of learning. When it is no longer possible to clearly establish the relationship between the work presented and the student's intellectual trajectory, assessment loses its formative and certifying functions, requiring institutional reconfiguration. As Alkouk and Khlaif (2024) indicate, a consistent response to this scenario does not lie in technological surveillance, but in the redesign of assessment practices, with emphasis on processes, explicit reasoning, and the demonstration of critical thinking.

ISSN 2675-7524 - v. 7, n. 27, 2026

In light of this set of arguments, it is maintained that the debate on Artificial Intelligence in the teaching of Architecture and Urbanism cannot be reduced to questions of permitted or prohibited use, nor to abstract technical solutions. It is fundamentally a political and pedagogical debate, requiring a clear institutional stance on what is understood as education, authorship, creativity, and intellectual responsibility. AI may perform auxiliary functions in academic processes, provided that its use is made explicit, supervised, and subordinated to formative objectives, rather than employed as a substitute for conceptual elaboration and the student's intellectual work (UNESCO, 2023).

Finally, the article argues that preserving the centrality of academic writing as a practice of thought and of theoretical reflection as the foundation of design is an indispensable condition for education in Architecture and Urbanism. In a context of increasing algorithmic mediation, reaffirming intellectual authorship, epistemological plurality, and responsibility for the knowledge produced means defending the university as a space for critical formation and situated knowledge production, rather than merely as an instance of technical training. The institutional and pedagogical choices made in response to AI will have direct implications for the profile of professionals trained and for the ways of understanding, designing, and intervening in contemporary space.

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STATEMENTS

AUTHOR CONTRIBUTIONS

Sandra Medina Benini:

- **Conceptualization and Study Design:** Responsible for the conception of the research, definition of objectives, and overall structure of the study.
- **Methodology:** Development and definition of the theoretical-critical approach and organization of the analytical axes.
- **Investigation:** Conducted the national and international literature review.
- **Formal Analysis:** Performed critical analysis and interpretation of the theoretical frameworks used.
- **Writing – Original Draft:** Responsible for the full drafting of the initial version of the manuscript.
- **Writing – Review & Critical Revision:** Revised the content, improving argumentation and theoretical coherence.
- **Final Review and Editing:** Adapted the manuscript to the journal's guidelines and performed final revisions.
- **Supervision:** Overall coordination of the study development.

DECLARATION OF CONFLICTS OF INTEREST

I, Sandra Medina Benini, declare that the manuscript entitled "Generative AI, Academic Writing, and Intellectual Formation in Architecture and Urbanism":

1. **Financial Interests:** Has no financial relationships that could influence the results or interpretation of the work. No funding institution or entity was involved in the development of this study.
2. **Professional Relationships:** Has a professional affiliation with the Centro Universitário de Várzea Grande (UNIVAG), with no influence on the analysis, interpretation, or presentation of the manuscript's results.
3. **Personal Conflicts:**
4. Has no personal conflicts of interest related to the content of this manuscript.