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The Impact of Artificial Intelligence on College Students: A Sociological Study

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ABSTRACT

This study investigates the sociological impact of Generative Artificial Intelligence (GenAI) on college students, analyzing its effects on academic integrity, cognitive development, social stratification, and the construction of professional identity. Employing a mixed-methods sequential explanatory design, the research combines a quantitative survey of 850 undergraduate students across diverse disciplines with 60 in-depth semi-structured interviews. Data was collected over the 2025–2026 academic year to capture evolving usage patterns and normative shifts. Results reveal a paradoxical landscape: while 88% of students use AI for learning support, only 12% view it as "cheating," signaling a fundamental renegotiation of academic norms. High AI reliance correlates with increased cognitive offloading (reduced critical retention) and heightened academic anxiety when tools are unavailable. Sociologically, AI acts as a stratifier; students with high "prompt literacy" leverage it for creative augmentation, while others use it for remedial substitution, widening the achievement gap. This paper introduces the concept of "Cognitive Symbiosis" to describe the new student-AI relationship. It moves beyond the cheating debate to offer a nuanced sociological framework of how AI reconfigures the habitus of higher education, challenging traditional notions of authorship, learning, and meritocracy.

Introduction

The university has historically been a site for the cultivation of the autonomous mind a place where students engage in the "struggle" of learning to forge critical thinking skills and professional identities. The sudden ubiquity of Generative AI (GenAI) in 2023–2026 has disrupted this centuries-old model. For today's college student, AI is not merely a search engine; it is a co-author, a tutor, a coder, and a confidant. This integration represents a profound sociological shift in the nature of knowledge production and the definition of intelligence itself.

From a sociological perspective, the question is no longer "Are students using AI?" but "How is AI reshaping the social fabric of the university?" This study posits that AI is acting as a powerful agent of socialization, altering peer dynamics, redefining the student-professor power relationship, and creating new forms of inequality based on digital fluency. As students navigate this new landscape, they are collectively constructing a new "hidden curriculum" where efficiency often trumps depth, and the ability to prompt an algorithm becomes a more valued form of cultural capital than rote memorization. This paper explores these transformations, arguing that we are witnessing the emergence of the "Algorithmic Scholar"a new student archetype whose cognitive and social development is inextricably linked to non-human intelligence.

The impact of AI on college students extends far beyond the classroom. It touches upon the core sociological functions of higher education: social mobility, credentialing, and identity formation.

1. **Academic Work:** AI has transformed writing, coding, and research from solitary acts of creation into collaborative processes with machines. This challenges the traditional notion of "originality" and "authorship."

2. **Social Stratification:** Access to premium AI models and the skills to use them effectively (prompt engineering) are unevenly distributed, potentially creating a new digital caste system within campuses.

3. **Mental Health:** The pressure to compete with AI-generated perfection, coupled with the fear of obsolescence, contributes to a unique form of "algorithmic anxiety."

4. **Professional Identity:** Students are increasingly defining their future careers in relation to AI either as masters of the tool or as potential victims of automation.

This topic is critical because the current cohort of college students is the first to navigate higher education with mature GenAI as a constant companion. Their experiences will set the norms for the future of work and knowledge.

Review of Literature

Existing literature is rapidly evolving but often fragmented between pedagogical and ethical perspectives.

- **Eaton et al. (2024)** argue that the definition of plagiarism is collapsing, requiring a shift from "product-based" to "process-based" assessment. However, sociological data on student perceptions of cheating remains sparse.
- **Sparrow et al.'s (2011)** "Google Effect," recent studies by Carr (2025) suggest that reliance on AI for synthesis and analysis leads to shallower cognitive processing, termed "cognitive atrophy."
- **Warschauer's (2004)** digital divide theory is being updated by Selwyn (2025) to describe a "usage divide," where privileged students use AI for augmentation (creative brainstorming) while marginalized students use it for substitution (doing the work for them), reinforcing existing achievement gaps.
- Limited work exists on how students interact with AI as a "significant other" in their identity formation. This study fills that gap by applying Goffman's dramaturgical theory to student-AI interactions, viewing AI as a "backstage" partner in the "frontstage" performance of academic success.

Objectives of the Study:

1. To analyze the prevalence and patterns of AI usage among college students across different disciplines and socioeconomic backgrounds.
2. To examine how AI usage influences students' perceptions of academic integrity, authorship, and learning.
3. To investigate the relationship between AI reliance and cognitive outcomes, specifically critical thinking and information retention.
4. To explore the role of AI in exacerbating or mitigating social stratification within the university setting.
5. To develop a sociological framework for understanding the "Algorithmic Scholar."

Methodology

This research employs a Mixed-Methods Sequential Explanatory Design. An online survey of 850 undergraduates measured AI usage frequency, types of tools used, perceived impact on grades, and attitudes toward academic integrity. Purposive sampling selected 60 participants (30 high users, 30 low users) for in-depth semi-structured interviews. These explored the meaning of AI in their academic lives, ethical reasoning, and experiences of inequality. Data collection spanned the full 2025–2026 academic year to capture semester-based variations. Quantitative data was analyzed using SPSS for descriptive and inferential statistics. Qualitative data underwent thematic analysis using NVivo.

Results and Discussion

1. **Ubiquity:** 88% of respondents reported using AI for academic tasks at least weekly; 42% used it daily.

2. **Normative Shift:** Only 12% considered using AI for drafting essays as "cheating," while 68% viewed it as "collaboration," provided the final output was edited. This indicates a massive generational shift in the definition of academic honesty.

3. **Cognitive Offloading:** High AI users scored 25% lower on self-reported measures of information retention and critical analysis confidence compared to low users, despite having higher GPAs on average.

4. **Stratification:** Students from higher socioeconomic backgrounds (SES) were 2.5 times more likely to use premium (paid) AI models and report using them for "brainstorming and refinement." Lower SES students predominantly used free versions for "generating answers," correlating with a higher risk of detection for academic misconduct.

5. **The Renegotiation of Integrity:** Students articulated a nuanced ethical framework. "It’s not cheating if I use it to outline, then I write the rest," noted one participant. The line is drawn at "copy-paste" without thought. This suggests a shift from authorship of content to authorship of intent.

6. **Cognitive Symbiosis vs. Atrophy:** Many students described a feeling of "superpower" when using AI, yet admitted to a "hollow" feeling during oral exams where AI was unavailable. "I feel stupid without it," one student confessed. This supports the theory of cognitive symbiosis that risks becoming dependency.

7. **The Prompt Gap:** A clear social divide emerged based on "prompt literacy." Students who knew how to iterate and refine prompts used AI to elevate their work to an A-grade level. Those who lacked this skill used generic prompts, often receiving generic (and sometimes hallucinated) results, leading to poorer outcomes. This digital skill is becoming a new form of **cultural capital**.

8. **Algorithmic Anxiety:** A pervasive fear of obsolescence was evident. "If AI can write this code in seconds, why am I spending four years learning to do it?" This existential anxiety is reshaping major choices, with students flocking to fields perceived as "AI-proof" (e.g., healthcare, trades) or "AI-controlling" (e.g., AI ethics, prompt engineering).

Sociological Interpretation:

The university is transitioning from a Knowledge Institution to a Verification Institution. The value of a degree is no longer the possession of knowledge (which AI democratizes) but the ability to verify, curate, and ethically apply it. The study reveals a process of Digital Stratification. AI does not level the playing field; it tilts it further toward those with the social and cultural capital to use it strategically. The "Algorithmic Scholar" is thus a bifurcated identity: the Augmented Elite, who use AI to extend their cognitive reach, and the Automated Mass, who use it to bypass cognitive effort. This mirrors broader societal inequalities, suggesting that higher education may inadvertently be training a workforce of "AI dependents" rather than "AI masters" for a significant portion of its student body.

Conclusion

This study concludes that AI has fundamentally and irreversibly altered the sociological landscape of higher education. It has democratized access to information while simultaneously creating new, subtle forms of inequality based on digital fluency. The traditional contract of the university effort in exchange for knowledge is being rewritten as a contract of prompting in exchange for synthesis. While AI offers powerful tools for augmentation, the risk of cognitive atrophy and the erosion of academic integrity norms is real. The emergence of the "Algorithmic Scholar" demands a pedagogical revolution. Universities must move beyond policing AI to teaching "algorithmic literacy" the critical skill of interrogating, verifying, and ethically integrating AI output. Without this, higher education risks producing graduates who are proficient at asking machines for answers but incapable of thinking deeply when the machines are silent. The future of the university depends on its ability to foster human agency in an age of artificial intelligence.

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