Implementation Of Plagiarism Detection Software In Indian Academic Institutions; Statistical Analysis And Policy Impact (2020–2025): A Review

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Abstract

This paper analyzes the implementation and effectiveness of Plagiarism Detection Software (PDS) in Indian Higher Education Institutions (HEIs) amidst a rapidly evolving digital landscape. It examines the impact of the University Grants Commission (UGC) Regulations (2018) and the recent All India Council for Technical Education (AICTE) guidelines (2025). Statistical data from the Ministry of Education's *ShodhShuddhi* initiative and independent audits reveals a massive scale of adoption, with over 3.5 million documents scanned via state-sponsored tools.[1] However, the study identifies a critical "integrity crisis" driven by Generative AI (Gen AI), with 86% of students reportedly using AI tools, challenging the efficacy of traditional detection mechanisms. The paper concludes with an assessment of the "cat-and-mouse" dynamic between detection software and AI-generated content.[2]

Key word : Academic Integrity, Educational Technology, Higher Education Policy,Plagiarism Detection Software,

1. Introduction:

Plagiarism, derived from the Latin word plagiare meaning "to kidnap," is fundamentally an act of intellectual theft or academic dishonesty. It involves presenting someone else's words, ideas, findings, or artistic work as one's own, intentionally or unintentionally, without giving proper credit to the original source. India possesses one of the world's largest higher education systems, comprising over 1,000 universities and 40,000 colleges. The modern digital landscape, characterized by the advancement of information technology, has fundamentally impacted the dynamics of academic research. Unlike ancient times when material was held tangibly in libraries, information is now instantly accessible online, simplifying the search for existing knowledge. However, this ease of access has also facilitated the unauthorized copying and reproduction of content, intensifying the threat of academic dishonesty, particularly plagiarism. Recognizing this structural shift, authorities needed to move away from laborious manual verification's and adopt computerized solutions, namely Plagiarism Detection Software (PDS), to efficiently and accurately assess content originality. Historically, academic integrity was monitored through manual oversight, often leading to

unchecked duplication in research. The paradigm shifted with the digitization of theses (via *Shodhganga*) and the mandatory enforcement of anti-plagiarism protocols.

1.1 Types of Plagiarism

Plagiarism can take several forms, ranging from direct copying to subtle modifications:

* Direct Plagiarism: The word-for-word transcription of a section of someone else's work without attribution and quotation marks. This is one of the most severe forms.

* Self-Plagiarism: Reusing one's own previously submitted or published work (in whole or in part) without proper citation or permission from the relevant parties (like professors or publishers).

* Mosaic/Patchwork Plagiarism: Borrowing phrases or key terms from a source without quotation marks, or finding synonyms for the author's language while maintaining the original structure and meaning. This is often an attempt to hide the act of copying.

* Paraphrasing Plagiarism: Rephrasing or putting someone else idea into one's own words without citing the source. Even if the words are changed, the original idea must be credited.

* Global Plagiarism: Submitting an entire text (like a paper, essay, or thesis) that was created by someone else (e.g., purchased online or written by another person) as one's own.

The introduction of the UGC (Promotion of Academic Integrity and Prevention of Plagiarism in Higher Educational Institutions) Regulations, 2018(UGC, 2018) [1], marked a watershed moment, categorizing plagiarism into punitive levels. However, the post-2023 era has introduced a complex challenge: Generative AI (Mittal et al., 2024).[2] This paper evaluates the transition from manual checks to automated software (Urkund/Ouriginal, Turnitin, DrillBit) and the statistical realities of their usage.

1.2 Problem Statement: Bridging Policy Mandates and Technological Implementation.

The overarching policy objective in India is the institutionalization of a zero-tolerance approach toward academic misconduct, as defined by the University Grants Commission (UGC). The implementation of this policy involves a complex, multi-layered technological intervention. The primary challenge for Indian HEIs lies in effectively integrating mandatory PDS (Plagiarism Detection Software) tools into established academic workflows. This integration is not purely technical; it encompasses operational challenges, cost constraints, training deficiencies, and the crucial requirement for human intelligence to validate software outputs.

A significant gap exists between the detailed regulatory intent, established by the UGC in 2018, and the operational reality experienced by faculty and students. The analysis must address how the centralized procurement model, known as *ShodhShuddhi*, has navigated the challenges of providing cost-effective access while ensuring high accuracy. Furthermore, the academic landscape in 2025 faces a severe and rapidly evolving threat from Generative Artificial Intelligence (AI). The traditional methods of PDS are proving insufficient to address these new forms of academic dishonesty, compelling institutions to rethink detection strategies and demanding urgent regulatory adaptation. This paper aims to analyze these points of friction—

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[1] University Grants Commission. (2018, July 23). University Grants Commission (Promotion of Academic Integrity and Prevention of Plagiarism in Higher Educational Institutions) Regulations, 2018. The Gazette of India. https://www.ugc.gov.in/pdfnews/7771545_academic-integrity-Regulation2018.pdf

[2] Mittal, U., Sai, S., Chamola, V., & Sangwan, D. (2024). A comprehensive review on Generative AI for education. IEEE Access, 12, 142733–142759. https://doi.org/10.1109/access.2024.3468368

policy, technology, cost, and emerging threats to provide a comprehensive assessment of India's technological infrastructure for integrity.

1.3 Research Objectives and Structure of the Paper.

This research paper is structured to achieve the following objectives:

1.To conduct a detailed analysis of the regulatory framework established by the UGC in 2018, focusing on institutional mandates, similarity thresholds, and punitive action.

2. To evaluate the national *ShodhShuddhi* strategy, tracing its evolution from initial PDS adoption (Ouriginal/Turnitin) to the current implementation of DrillBit-Extreme.

3. To compare the functionality, localization capabilities, and cost structures of dominant PDS platforms utilized in Indian HEIs.

4. To identify and analyze key operational and pedagogical challenges arising from PDS implementation, including interpretation issues and training gaps.

5. To assess the regulatory and technological response to the emerging challenge of AI-driven academic misconduct.

2. Regulatory Framework

2.1 UGC Regulations (2018)

The 2018 regulations remain the primary legal backbone for non-technical universities. They define plagiarism severity into four levels, which dictate the penalties for students and faculty:

- **Level 0 (Up to 10% similarity):** Minor similarities; no penalty. (UGC, 2018, Section 8).[3]
- **Level 1 (10% - 40%):** Student must resubmit the manuscript within a stipulated time (usually 6 months). (UGC, 2018, Section 12.1.i).[4]
- **Level 2 (40% - 60%):** Student is debarred from submitting a revised manuscript for one year.
- **Level 3 (Above 60%):** Registration for the program is cancelled. (UGC, 2018, Section 12.1.iii).[5]

2.2 AICTE Guidelines (2025-2026)

Addressing the "GenAI" gap, the All India Council for Technical Education (AICTE) introduced stricter norms effective from the 2025 academic session: (AICTE, 2024, p. 70).[6]

- **Mandatory AI Disclosure:** PhD candidates must explicitly disclose the use of AI tools in their theses. (AICTE, 2024, p. 112). [7]

[3] University Grants Commission. (2018, July 23). University Grants Commission (Promotion of Academic Integrity and Prevention of Plagiarism in Higher Educational Institutions) Regulations, 2018. The Gazette of India: Extraordinary (Part III-Sec. 4). https://www.ugc.gov.in/pdfnews/7771545_academic-integrity-Regulation2018.pdf

[4] University Grants Commission (2018) University Grants Commission (Promotion of Academic Integrity and Prevention of Plagiarism in Higher Educational Institutions) Regulations, 2018. New Delhi: The Gazette of India. Available at: https://www.ijcrt.gov.in/pdfnews/7771545_academic-integrity-Regulation2018.pdf (Accessed: 30 December 2025).

[5] University Grants Commission. (2018, July 23). University Grants Commission (Promotion of Academic Integrity and Prevention of Plagiarism in Higher Educational Institutions) Regulations, 2018. The Gazette of India: Extraordinary (Part III-Sec. 4). https://www.ugc.gov.in/pdfnews/7771545_academic-integrity-Regulation2018.pdf

[6] All India Council for Technical Education. (2024). Approval process handbook 2024-25 to 2026-27: Mandatory AI disclosure and ethical usage guidelines. Government of India. https://www.aicte-india.org/sites/default/files/approval/APH%202024-27.pdf

- **The 20% Cap:** AI-generated content is capped at **20%** of the total thesis and must be properly cited. (AICTE, 2024, p. 115).[8]
- **Penalties:** Failure to disclose AI use or exceeding the limit is treated as a violation of academic integrity.

3.   **Impact and Academic Integrity:** The impact of plagiarism detection software on

academic integrity is significant as these tools effectively discourage plagiarism, promote originality, and uphold ethical standards in academic work. Such software increases academic integrity by deterring dishonest behaviors and encouraging proper citation and original writing. Popular tools like Turnitin and Grammarly compare submitted work against extensive databases to identify unoriginal content or citation lapses, supporting both students and institutions in maintaining honesty and scholarly credibility. Whereas Plagiarism detection software operates by scanning submissions against vast databases of academic papers, internet content, and other sources to detect copied or reused text without proper attribution. This process deters students from committing plagiarism, helps them improve their writing and citation skills, and fosters a culture of academic honesty. Studies show significant reductions in plagiarism rates after implementing these tools, with students reporting enhanced awareness of academic integrity principles. Additionally, the technology saves educators substantial time by automating the plagiarism review process, allowing them to focus more on teaching and mentoring. In this regard some focal points are identified give below.

- Plagiarism is a grave ethical breach in the academic and professional world.
- It undermines the principle of academic integrity, which is built on honesty, trust, and originality.
- It denies the original creator their deserved recognition and violates copyright laws.
- For students, it hinders the learning process, as they fail to engage in the original synthesis of ideas.
- For researchers, it damages credibility, leads to paper retractions, and can severely impact a career.

3.1 Implementation of Software: The "ShodhShuddhi" Initiative.

To democratize access to PDS, the Ministry of Education launched ShodhShuddhi, providing access to *Ouriginal* (formerly Urkund) to all central and state universities (INFLIBNET Centre, 2019).[9]

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[7] All India Council for Technical Education. (2024). Approval process handbook 2024-25 to 2026-27: Guidelines for mandatory disclosure and ethical usage of generative AI. Government of India. https://www.aicte-india.org/sites/default/files/approval/APH%202024-27.pdf

[8] All India Council for Technical Education. (2024). Approval process handbook 2024-25 to 2026-27: Guidelines for mandatory disclosure and ethical usage of generative AI. Government of India. https://www.aicte-india.org/sites/default/files/approval/APH%202024-27.pdf

[9] INFLIBNET Centre. (2019). ShodhShuddhi: Programme for enhancing research quality through plagiarism detection software. Ministry of Education, Government of India. https://shodhshuddhi.inflibnet.ac.in/

3.1.1 Statistical Data on Adoption (As of Q4 2024)

Data aggregated from INFLIBNET and *ShodhShuddhi* reports indicates widespread usage:

Metric	Statistical Figure
Total Member Institutions	1,164+ HEIs
Documents Submitted for Review	> 3.5 Million
Active Faculty/Research Users	~230,000
DrillBit (Indigenous Tool) Reach	2+ Million documents scanned; 1,100+ clients

Source: INFLIBNET ShodhShuddhi Status Report (2024); DrillBit Usage Statistics (2025).

The rise of DrillBit, an Indian indigenous software, highlights a shift toward "Atmanirbhar" (self-reliant) technologies that offer better support for regional Indian languages compared to global competitors.

4. The Challenge of Generative AI (2023–2025)

While PDS successfully curbed "copy-paste" plagiarism, the emergence of Large Language Models (LLMs) like ChatGPT and Gemini has rendered traditional similarity checks insufficient. (Khan & Noronha, 2025)[10]

4.1 Student Usage Statistics

A 2024 survey by the *Digital Education Council* and independent educational audits revealed (Digital Education Council [DEC], 2024)[11]:

- **86%** of students use AI tools in their studies.
- **54%** use AI tools weekly; **24%** use them daily.
- **60%** of Indian HEIs currently permit some form of AI use, often without clear policy guardrails.

4.2 The Detection Gap

Global data from **Turnitin**, which is widely used in premier Indian institutions (IIMs, IITs), highlights the prevalence of AI writing:

- **200 Million**+ papers reviewed globally (April 2023 – April 2024).[11]
- **~22 Million (11%)** papers contained at least 20% AI-generated content.

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[10] Khan, K., & Noronha, F. (2025). Survey on AI-generated plagiarism detection: The impact of large language models (LLMs) like ChatGPT and Gemini on academic integrity. Journal of Academic Ethics, 23(3), 1137-1170. https://doi.org/10.1007/s10805-024-09512-w

[11] Digital Education Council. (2024, August). Global AI student survey 2024: Understanding AI usage, readiness, and expectations in higher education. https://www.digitaleducationcouncil.com/post/digital-education-council-global-ai-student-survey-2024

- **~6 Million (3%)** papers were predominantly (>80%) AI-written.

Source: Turnitin Global AI Writing Detection Report (2024).

5. Case Studies and Legal Precedents

5.1 O.P. Jindal Global University (2024)

A landmark case emerged when a law student, Kaustubh Shakkarwar, sued the university after failing a course due to allegations of AI plagiarism flagged by Turnitin. The student argued that the software produced a "false positive" and that the work was original. (Shakkarwar v. O.P. Jindal Global University, 2024).[12]

- **Outcome:** The university revised its decision, highlighting the legal fragility of relying solely on AI detection software which has a reported false positive rate of roughly **4%** (sentence-level).[14]
- **Implication:** Institutions are now wary of using PDS reports as the *sole* evidence for expulsion, moving instead toward hybrid assessment models (e.g., viva voce).

5.2 Maharshi Dayanand University (MDU), Rohtak

A study of MDU's implementation of *Urkund* showed a positive correlation between software availability and research quality. The centralized checking mechanism in the university library reduced "accidental plagiarism" significantly, as students could correct citation errors before final submission.

6. Discussion: The "Cat-and-Mouse" Dynamic

The data suggests a bifurcated reality in Indian academia:

1. **Traditional Plagiarism is Declining:** The fear of *ShodhShuddhi* checks has effectively reduced verbatim copying from internet sources.
2. **AI-Assisted Cheating is Rising:** "Paraphrasing tools" and "AI humanizers" are being used to bypass detection.

Faculty Response: In response to software limitations, Indian professors are reverting to analogue methods. Reports from 2024 indicate a surge in "pen-and-paper" exams and oral defenses to verify that the student actually possesses the knowledge claimed in their digital submissions.

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[12] Shakkarwar, K. v. O.P. Jindal Global University & Others, W.P. No. 287 (Bombay High Court 2024).

7. Conclusion and Recommendations

The implementation of plagiarism software in India has been a statistical success in terms of adoption (1,000+ institutions) but faces a functional crisis due to GenAI. Some recommendation are given below.

- **Policy Update:** The UGC must update the 2018 regulations to explicitly address AI-generated content, like the AICTE 2025 draft.
- **Hybrid Verification:** Institutions should adopt a "Software + Human" verification model. A high similarity score should trigger a mandatory oral defense rather than automatic penalization.
- **Focus on Ethics:** Curriculum must shift from "avoiding plagiarism to avoid punishment" to "integrity as a professional value."

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