International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 15 Issue 11 , November - 2026

# Generative AI in Education: Opportunities, Risks and Academic Integrity

**Vaishnavi Punalkar**
Assistant Professor
Suryadatta College of Management Information Research & Technology
Pune, India

**Anamika Kirve**
Student, MSC Computer Science
Suryadatta College of Management Information Research & Technology
Pune, India

**Abstract - ChatGPT and similar tools have entered universities faster than policies could be written for them. To understand what this means in practice, this paper brings together the findings of five recent peer-reviewed studies on generative AI (GenAI) in higher education, covering teaching, learning and assessment, and then turns to the situation in India. The studies are read through a thematic analysis built around four areas: academic integrity and detection, learning opportunities, privacy, bias, copyright and ethics, and policy readiness. They agree that GenAI can offer students personalised feedback and support different kinds of learners. They also agree that detection software is unreliable, and that unclear rules, weak infrastructure and limited teacher training hold back the benefits. From these findings the paper proposes a four-part framework for responsible use, with recommendations for institutions, teachers, students and policymakers. It concludes that assessment redesign, clear rules and AI literacy protect integrity better than detection tools alone, and that field research in Indian institutions is still needed.**

**Keywords: Generative Artificial Intelligence, Education, Academic Integrity, Thematic Analysis, Literature Review, AI Ethics, Higher Education, Personalized Learning**

## I. INTRODUCTION

ChatGPT became publicly available in November 2022 and is reported to have reached an estimated 100 million monthly users within two months [1]. Another study notes that its first million users signed up within five days of launch [2]. Because such tools can write essays, explain concepts, generate code and give feedback in plain language, students and teachers quickly began using them in everyday academic work.

This rapid adoption has two sides. Studies gathered in a recent special issue report that generative AI can offer personalised feedback, support language learning and raise learner engagement [3]. At the same time, the concerns are real. AI-written assignments can slip past traditional plagiarism checkers [4], and AI detection tools are known to produce both false positives and false negatives [1]. Privacy is a further worry: Italy restricted access to ChatGPT in 2023 over data protection issues [1], [2].

In India, the National Education Policy 2020 encourages the use of technology and AI in education, yet researchers point to weak digital infrastructure, limited teacher training and gaps in the enforcement of data protection [5]. Existing studies often treat academic integrity and pedagogical benefits separately [4], and measurable evidence from Indian classrooms is still scarce [5]. This paper therefore reviews five studies together and asks three questions: (1) How does generative AI affect academic integrity? (2) What learning opportunities does it create? (3) What do institutions, especially in India, need to do to adopt it responsibly? The rest of the paper is organised as follows. Section II states the problem, Section III lists the objectives and Section IV reviews the literature, after which the method, analysis, discussion and conclusion follow.

## II. PROBLEM STATEMENT

Higher education institutions are adopting generative AI faster than they are preparing for it. Studies report that tools like ChatGPT can perform well on law, economics and medical licensing questions, and that students are already using them for assessed work [1]. Current plagiarism and AI detection tools, meanwhile, are described as inadequate for educators' needs [4], and many institutions still have no clear policy on what counts as acceptable use [5].

The literature reports real benefits, including personalised feedback and higher engagement [3], but these benefits do not reach everyone equally. Much depends on infrastructure, teacher training and ethical guidelines, which are often missing [3], [5]. In India the gap is wider, because connectivity, language and access differ between urban and rural institutions [5]. The separate findings on integrity, learning and policy therefore need to be brought together in a single view.



(This work is licensed under a Creative Commons Attribution 4.0 International License.)

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 15 Issue 11 , November - 2026

## III. RESEARCH OBJECTIVES

### A. Objectives

This paper has five objectives:

1: To study the effect of generative AI on academic integrity and the reasons why detection methods are falling short.
2: To identify the opportunities that generative AI creates for learning, teaching and inclusion in higher education.
3: To analyze the concerns about privacy, bias, accuracy, copyright and equity that come with its use.
4: To understand the Indian policy setting and the obstacles to adoption there.
5: To propose practical recommendations for institutions, teachers, students and policymakers.

### B. Scope and Significance

The paper is limited to five peer-reviewed studies on generative AI in education, published between 2023 and 2025. All five concern higher education, and one deals directly with India. No new survey or interview data are reported. The contribution lies in placing findings on academic integrity, learning opportunities, ethics and policy side by side and turning them into a simple framework and a set of recommendations. Students who want to understand responsible use, teachers who are redesigning assessments, and institutional leaders and policymakers preparing AI guidelines may all find it useful.

## IV. LITERATURE REVIEW

### A. Rapid Rise of Generative AI in Education

After its public release at the end of 2022, ChatGPT built a very large user base in a short time, with over one million active users within five days [2]. Generative AI differs from earlier educational technology in one important way: it produces original content, including text, code and images, instead of only analysing data [5]. A special issue of seventeen research papers concluded that such tools may improve student outcomes by giving individual feedback, supporting language learning and increasing motivation. The authors also stressed the need for ethical guidelines and student-centred oversight, because privacy, bias and accuracy problems have been reported [3].

In this paper, generative AI (GenAI) means AI models that create new content, such as text, images, audio, code or video, after learning patterns from existing data [5]. Large language models (LLMs) like ChatGPT are the examples discussed most often in education [1], [4]. ChatGPT reads a user's prompt, applies a statistical model trained on a large body of text, and returns an answer [1]. Higher education institutions are abbreviated as HEIs from here on.

### B. Academic Integrity and Detection

Academic integrity is the concern raised most often. According to [1], ChatGPT earned an average grade of C+ on real law school exams. On a standard economics test it reached the 91st percentile in microeconomics and the 99th in macroeconomics [6], and on questions modelled on the United States Medical Licensing Examination it scored about as well as a third-year medical student [7]. These tests were run in early 2023, and the tools have improved since [1]. A survey from the same period, also reported in [1], found that more than one-third of the students asked had used ChatGPT for assessments, and many of them thought this was cheating.

A systematic review of 41 studies concludes that generative AI can produce ghostwritten assignments that ordinary plagiarism tools fail to recognise [4]. Detectors are not a dependable answer either. They produce false positives and false negatives, and students can edit AI output so that it looks less machine-written [1]. One analysis found them only slightly better than a random classifier [8], and Liang et al. [9] showed that some detectors are biased against non-native English writers because they read low-perplexity text as a sign of machine writing. In [2], an article generated by ChatGPT received a low plagiarism match, which shows how easily such text can pass similarity checks. As discussed in [4], Khalil and Er [10] propose a two-step process: first confirm where the content came from, then check similarity.

### C. Assessment Redesign and Pedagogy

Since detection cannot be relied on, many authors argue that assessment itself has to change. Their suggestions include questions built around images or recent events, some in-class assessment [11], and grading the process, drafts and reflections rather than only the finished product [1]. The systematic review likewise points to project-based work, oral exams and tasks that call for higher-order thinking [4], and it warns that heavy dependence on AI may weaken critical thinking and independent problem solving [4].

For multiple-choice tests, [1] lists several ideas: questions that require working with images, figures or charts; linked questions where a correct answer is needed before the student can move on; application of concepts to recent events; and answer options that are all plausible. The same study cautions that such tests take longer to write, are hard to build in some subjects and may stop working as the technology advances [1].

The evidence on learning gains is mixed. In a primary school mathematics experiment, students taught from a ChatGPT-designed lesson plan scored higher, but the difference was not statistically significant [12]. Another study in the special issue found that the mathematics tasks ChatGPT generated were mostly procedural and lacked cognitive depth [3].

### D. Learning Opportunities and Inclusion

The literature also reports clear benefits. ChatGPT can give grammar feedback to non-native English speakers and help neurodivergent students organise their thoughts, and AI tools can assist students with disabilities in reading and writing [1], [5].


(This work is licensed under a Creative Commons Attribution 4.0 International License.)

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 15 Issue 11 , November - 2026

Kasneci et al. [13] observe that AI can support adaptive writing and bring out key information in different formats. In a pilot study with engineering lab reports, ChatGPT improved students' awareness of audience and use of genre conventions, although critical thinking improved very little [14]. Language teachers say it helps with vocabulary, conversation practice and quick feedback, but it can miss cultural and linguistic nuance [3]. Across the sources, AI is treated as a supporting tool and not a substitute for the teacher [2], [3].

Study [1] also discusses equality, diversity and inclusion at some length. Chatbots can answer course questions, point students to resources and offer material for different learning styles, and ChatGPT can simplify complex ideas for students with communication difficulties. Unequal access to technology, however, can widen existing gaps. The study therefore advises institutions to guarantee equal access, explain the limits of these tools to staff and students, and write AI policies that fit the needs of the whole academic community [1].

*E. AI Literacy, Skills and Teaching Support*

Several studies link generative AI to the skills students will need after graduation. According to [1], as tools like ChatGPT become routine at work, graduates need to know what AI can and cannot do and to understand its ethical and social effects. This AI literacy can be built up gradually through curriculum design and assessment. The study proposes that institutions first teach students to deal with the challenges of AI, then introduce basic prompt engineering, and then develop use cases that matter for graduate jobs [1].

Classroom examples include asking students to assess ChatGPT's answers, or to compare an AI-written paper with the original, in order to build critical thinking; using AI to brainstorm project ideas; and using it to produce code snippets, tables and spreadsheet formulas that students must then check and edit [1]. AI can also give immediate feedback and tailored study material [1]. Study [5] adds that AI-generated answers can start classroom discussions in which students judge whether the reasoning holds up, and that AI can take over routine teacher tasks such as grading, attendance and drafting lesson material, leaving more time for contact with students. In emerging co-teaching models, AI acts as a digital assistant that handles formative assessment or extra content while teachers concentrate on mentoring, emotional engagement and higher-order questioning [5].

*F. Student and Teacher Perceptions*

Several studies in the special issue ask how students and teachers see these tools [3]. In one study of undergraduate, postgraduate and doctoral students, ChatGPT was mostly used briefly for research, and students did not lean on it heavily. They valued the time it saved, its help with difficult topics and the confidence it gave them, but they worried about accuracy, loss of creative and critical thinking, cheating and fairness [3]. High school students in another study felt that ChatGPT could be brought into classrooms safely if there were usage guidelines, monitoring and proper training for students and teachers, and they asked to be involved in decisions about AI in schools [3].

Teachers show a similar mix of interest and caution. A study of English language teachers, built on the Technology Acceptance Model, found that perceived usefulness, ease of use and a positive attitude all raised their intention to use ChatGPT in teaching [3]. Another study found large differences in teachers' awareness and use of the tool, which fits the view that adoption is gradual and led by early users [3]. Short anecdotes in [5] show the same mix in India: one teacher found ChatGPT-made exercises useful but had to adjust most of them, and a student said AI saves time although the content can feel too generic.

*G. Privacy, Bias and Misinformation*

Language models learn from data that carry social bias, so they can repeat or even amplify it [1]. They can also hallucinate, for instance by inventing references that look genuine but do not exist [1]. Mijwil et al. [2] add that the quality of ChatGPT's output depends on the quality and variety of its input data, so its limitations and biases must be kept in mind. Privacy is another issue, because it is not entirely clear how user conversations are stored and used, and Italy briefly restricted ChatGPT in 2023 for this kind of reason [1], [2]. Authors therefore recommend teaching students to verify AI output and to understand its limits [1], [2].

Misinformation is a related danger. Because AI text is fluent, well written and well formatted, users may trust it without question [1]. The same study notes that fake references can sometimes help teachers spot students who falsely present AI work as their own, but checking every reference takes extra time [1]. Mijwil et al. [2] fear that a generation with ready answers at hand may never learn to verify information. They also recall that in 1988 mathematics teachers in the United States protested against calculators in schools [2], a reminder that worry about students relying on tools is not new. What matters is that students learn the limits of the tool and how to judge what it produces.

*H. Copyright and Intellectual Property*

Study [1] gives copyright a separate section. ChatGPT is trained on very large amounts of text, including books and articles, so some of its training data may be protected by copyright [1]. The study reports that two authors sued OpenAI, claiming their books were used for training without permission, and that Google was likewise accused in a lawsuit of scraping data without consent. The outcome may depend on whether courts treat such use as fair use or as unauthorised copying [1]. Rules also differ between countries: according to [1], the training approach OpenAI describes falls short of the European GDPR, which gives people the right to be informed about the use of their data and to have it removed.

For universities, the study advises first raising awareness of possible copyright violations among students and staff and, over time, working with providers who can show that their training data is legitimate. As an example, it mentions an image generation tool (Adobe Firefly) whose maker offers protection against intellectual property claims because the tool is trained on company-owned images [1].

*I. Research and Publication Ethics*


(This work is licensed under a Creative Commons Attribution 4.0 International License.)

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 15 Issue 11 , November - 2026

Study [2] approaches AI from the standpoint of research and publication ethics. It explains that research ethics cover protecting participants' privacy, avoiding conflicts of interest and working honestly, while publication ethics cover avoiding plagiarism, making sure every author has contributed and reporting findings accurately. It also describes the core practices of the Committee on Publication Ethics (COPE), which deal with misconduct, authorship, data, intellectual property and peer review [2].
Against this background, the authors note that ChatGPT has been used to write introductions, abstracts, code and conclusions, to arrange references and to polish language, and that it has even been named as a co-author in some academic studies [2]. They warn that it could be used to fabricate research or spread false information, yet they also say it can support scientific writing and make technical language easier for non-experts to follow [2]. In their own test, ChatGPT wrote a short article with a low plagiarism match and good language, but the article did not follow an academic style, had a weak literature survey and reached unclear conclusions [2]. Their advice is to use AI tools carefully and to have the generated material checked by more than one person [2].

## V. METHODOLOGY

### A. *Research Design*

This paper follows a qualitative and exploratory approach based on secondary data. No survey or interview was conducted. Instead, existing peer-reviewed studies are read together and compared to find common ideas, differences and gaps. The steps of the review are shown in Fig. 1.

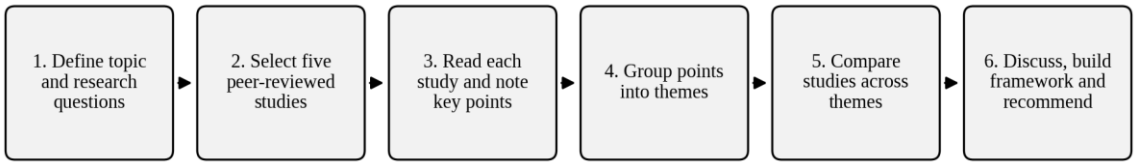



Fig. 1. Workflow followed in this review.

### B. *Selection of Studies*

Five studies published between 2023 and 2025 were selected. A study was included if it (i) dealt with generative AI in education, (ii) discussed academic integrity, teaching and learning, or institutional policy, and (iii) was published in a peer-reviewed journal. One study was chosen because it focuses on the Indian context [5]. Table I gives an overview. Where these studies report findings from other works, those works are listed as additional references [6]–[14] and are described only as reported in the five studies.

TABLE I. STUDIES INCLUDED IN THE REVIEW

| Ref. | Authors (Year) | Type of Study | Main Focus |
|---|---|---|---|
| [1] | Bobula (2024) | Literature review | Challenges, opportunities and policy in higher education |
| [2] | Mijwil et al. (2023) | Analytical study with a ChatGPT-generated article | Academic ethics and research writing |
| [3] | Noroozi et al. (2024) | Special-issue synthesis of 17 studies | Pedagogical and methodological perspectives |
| [4] | Bittle and El-Gayar (2025) | Systematic review of 41 studies | Academic integrity and research agenda |
| [5] | Ravichandran and Sasikala (2025) | Qualitative exploratory study | Opportunities, challenges and ethics in India |

### C. *Method of Analysis*

The analysis followed the workflow shown in Fig. 1. The topic and the three research questions were fixed first. Five peer-reviewed studies were then chosen using the criteria given above, and each was read in full while its main findings, recommendations and limits were noted. Points that appeared repeatedly were grouped into four themes: (1) academic integrity and detection, (2) learning and teaching opportunities, (3) privacy, bias, copyright and ethics, and (4) policy and institutional readiness. A fifth, India-specific theme comes only from [5]. The studies were then compared across these themes to see where they agree, where they differ and what is missing (Tables II and III). Finally, the comparison was used to write the discussion, to build the four-part framework in Fig. 2 and to prepare the recommendations.

## VI. THEMATIC ANALYSIS

### A. *Coverage of Themes*

Table II shows which study discusses which theme. A study is marked "Yes" when the theme is a main part of its discussion and "Partial" when it is mentioned only briefly.


(This work is licensed under a Creative Commons Attribution 4.0 International License.)

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 15 Issue 11 , November - 2026

TABLE II. THEME COVERAGE ACROSS THE REVIEWED STUDIES

| Theme | [1] | [2] | [3] | [4] | [5] |
|---|---|---|---|---|---|
| Academic integrity and detection | Yes | Yes | Partial | Yes | Yes |
| Learning and teaching opportunities | Yes | Partial | Yes | Yes | Yes |
| Privacy, bias, copyright and ethics | Yes | Yes | Yes | Partial | Yes |
| Policy and institutional readiness | Yes | Yes | Yes | Yes | Yes |
| Indian context | No | No | No | No | Yes |

### *B. Theme 1: Academic Integrity and Detection*

All studies treat integrity as a major concern. Study [1] reports that ChatGPT performed well on law and economics exams and that detection tools were only marginally better than a random classifier in some tests. Study [4] adds that conventional plagiarism tools fail to recognise essays written by ChatGPT. Study [2] shows the same problem in practice: an article generated in under three minutes showed a low plagiarism match.

The studies disagree on one point. Study [4] reports, based on Khalil and Er [10], that ChatGPT identified AI-generated content more accurately than Turnitin in one test, while [1] describes detection tools as unreliable. This suggests that detection is improving but is still not dependable enough to be the only safeguard. The studies therefore move toward assessment redesign and clear policy [1], [4].

### *C. Theme 2: Learning and Teaching Opportunities*

Study [3] reports benefits such as personalised feedback, language learning support and higher engagement, while [1] adds support for students with disabilities and non-native English speakers. The evidence, however, is mixed. A lesson-plan experiment showed higher but not statistically significant scores [3], and ChatGPT-generated mathematics tasks lacked cognitive depth [3]. Study [2] found that the generated article had strong language but did not follow an academic style and had a poorly summarised literature survey and unclear conclusions. Taken together, these results support the view that AI works best as a supporting tool, not as a replacement for the teacher or the writer [2], [3], [5].

### *D. Theme 3: Privacy, Bias, Copyright and Ethics*

Study [1] notes that language models inherit social biases from their training data and can invent false references. Privacy is raised in [1], [2] and [3], mainly because it is unclear how user data are stored and used. The Indian study goes further: models trained on English and urban data may misjudge students who use regional languages, and the lack of caste-disaggregated data may hide social inequalities [5]. Equity concerns are therefore not only about access to devices, but also about whether the tools work fairly for different groups.

Copyright and research ethics are discussed mainly in [1] and [2]. Study [1] focuses on the use of copyrighted material in training data and on differences between legal systems, while [2] focuses on authorship, plagiarism and the risk of fabricated research. The other studies mention ethics only in general terms and call for guidelines [3], [5]. In the studies reviewed here, copyright thus receives much less attention than integrity and learning, and [1] advises institutions to follow regulators and to ask providers for clarity about their training data.

### *E. Theme 4: Policy and Institutional Readiness*

Every study calls for guidelines. Study [1] recommends clear AI policies, updated misconduct rules and support for staff AI readiness. Study [3] stresses ethical guidelines and human oversight, and [4] calls for training and transparent policies. Study [5] adds that infrastructure and teacher training are preconditions in India and recommends a "teacher-in-the-loop" design so that educators keep control over how AI is used.

### *F. Theme 5: The Indian Context*

Only study [5] looks at India directly. It describes the National Education Policy 2020 as supportive of AI in education but points out that implementation is uneven. It also notes that the Digital Personal Data Protection Act 2023 provides a legal framework but suffers from weak enforcement, and that many institutions and EdTech platforms lack clear privacy policies. The study highlights the urban–rural digital divide, the lack of teacher training and the risk that English-trained tools may disadvantage regional-language learners [5].

### *G. Key Findings of Each Study*

Table III lists the main findings and the main recommendation of each reviewed study.


(This work is licensed under a Creative Commons Attribution 4.0 International License.)

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 15 Issue 11 , November - 2026

TABLE III. KEY FINDINGS AND MAIN RECOMMENDATION OF EACH STUDY

| Ref. | Key findings | Main recommendation |
|---|---|---|
| [1] | ChatGPT performs well on several exams; detection tools are unreliable and biased against non-native writers; benefits for inclusion and personalised learning; risks of privacy, copyright and misinformation | Update policies and assessment; train staff and students; give the transition enough resources |
| [2] | A ChatGPT-written article had a low plagiarism match and good language, but a weak academic style, literature survey and conclusions; ethical risks in research writing | Use AI as a supporting tool, check its output with more than one person, and teach its limits and biases |
| [3] | Across 17 studies, AI supports personalised feedback, language learning and engagement, but has limits in context, accuracy and critical thinking | Develop ethical guidelines and keep human oversight; run longitudinal studies |
| [4] | Review of 41 studies: GenAI enables dishonesty that detection tools often miss, but can also enrich learning | Better detection, educator training, ethical guidelines and redesigned assessments |
| [5] | Gaps in infrastructure, language support and data protection in India; risk to teacher autonomy; benefits for personalised learning and accessibility | Invest equitably in infrastructure, train teachers, pilot regional-language tools and strengthen data protection |

## VII. DISCUSSION

### A. *Interpreting the Findings*

The reviewed studies show that generative AI is neither simply a threat nor simply a solution. The same ability that lets ChatGPT give feedback and explain concepts [3] also lets it produce assignments that are hard to detect [1], [4]. This is why the studies move away from the question "Should AI be banned?" and toward "How should education be redesigned around it?" Study [1] points out that the arrival of generative AI is also a chance to revisit assessment strategies and make them more relevant and engaging. Table IV summarises the main concerns raised in the studies and the responses they suggest.

TABLE IV. KEY CONCERNS AND SUGGESTED RESPONSES IN THE REVIEWED STUDIES

| Concern | Reported in | Suggested response |
|---|---|---|
| AI-written work that is hard to detect | [2], [4] | Redesign assessments; use process, drafts and oral tasks |
| Unreliable detection tools | [1], [4] | Do not depend on software alone; combine it with policy and awareness |
| Fake references and wrong answers | [1] | Teach verification and critical evaluation of AI output |
| Privacy of user data | [1], [2], [3], [5] | Clear data rules; avoid sharing personal data; follow regulators |
| Copyright of training data | [1] | Raise awareness; prefer providers with clear training data |
| Bias and unequal access | [1], [3], [5] | Diverse datasets, fairness checks, regional-language tools, better infrastructure |
| Low teacher readiness | [1], [3], [5] | Training and support for staff; teacher-in-the-loop design |

### B. *Answers to the Research Questions*

The first question asked how generative AI affects academic integrity. The studies show that it makes it easy to produce fluent work that is hard to identify as machine-written, that detection tools are not reliable enough to be used alone, and that integrity therefore depends on assessment design and clear rules [1], [2], [4].

The second question asked what learning opportunities it creates. The main ones are personalised feedback, language learning support, help for students with disabilities and non-native speakers, and support for brainstorming and writing [1], [3]. The evidence on actual learning gains, however, is still mixed [3].

The third question asked what institutions, especially in India, must do to adopt it responsibly. The studies point to clear policies, redesigned assessments, training for teachers and students, attention to privacy and copyright, and equal access to infrastructure and language support [1], [3], [4], [5].

### C. *Detection Is Not Enough*

One clear message across the studies is that technical detection cannot carry the whole burden of academic integrity. Detection tools can produce false positives and false negatives, can be bypassed by editing the output, and may be biased against non-native English writers [1]. Study [2] shows that a generated article can pass a plagiarism check with a low matching percentage. Together, these findings suggest that integrity is better protected through assessment design, clear rules and student awareness than through software alone [1], [4]. Study [4] also supports a socio-technical view that takes human psychology, organisational culture and social norms into account.

### D. *Benefits Depend on Conditions*

The reported learning benefits are not automatic. Studies in the special issue show that outcomes depend on clear prompts, expert review of AI output and teachers' technological skills [3]. In the Indian context, the same tools may help or fail depending on internet access, device availability and the language in which the tool works [5]. The same technology can therefore narrow or



(This work is licensed under a Creative Commons Attribution 4.0 International License.)

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 15 Issue 11 , November - 2026

widen learning gaps. Study [5] raises exactly this question, asking whether personalisation can be equitable if access itself is unequal.

### *E. The Role of the Teacher*

The studies consistently place the human teacher at the centre. Study [3] stresses that AI should complement human judgment and not replace it, and [5] recommends teacher-in-the-loop design so that educators keep control of how the tools are used. Study [5] also warns that over-reliance on AI may reduce teacher autonomy and professional judgment. Teachers therefore need training not just to use the tools, but to understand their limits and biases [1], [5].

### *F. Limits of the Reviewed Evidence*

The evidence behind these conclusions has limits. Study [1] points out that the exam results it reports come from early 2023 and that the tools have improved since then. Several of the studies in [3] are small pilots or classroom experiments, and one experiment found no statistically significant difference between groups [3]. The systematic review [4] used only four databases and English-language papers, which may have narrowed the range of views, and the Indian study [5] relies on secondary sources and includes no primary data from students or teachers. For these reasons, the recommendations in this paper should be tested in real institutions before they are treated as settled.

### *G. Proposed Framework*

Based on the themes, this paper proposes a simple four-part framework for responsible adoption, shown in Fig. 2. Its parts are (1) clear policy, (2) redesigned assessment, (3) AI literacy and teacher training, and (4) infrastructure and equity. They work together: a good policy has little effect if teachers are not trained, and training has little effect if students cannot get reliable devices and internet access. The framework is the author's own synthesis of the recommendations found in the reviewed studies and has not yet been tested in practice.

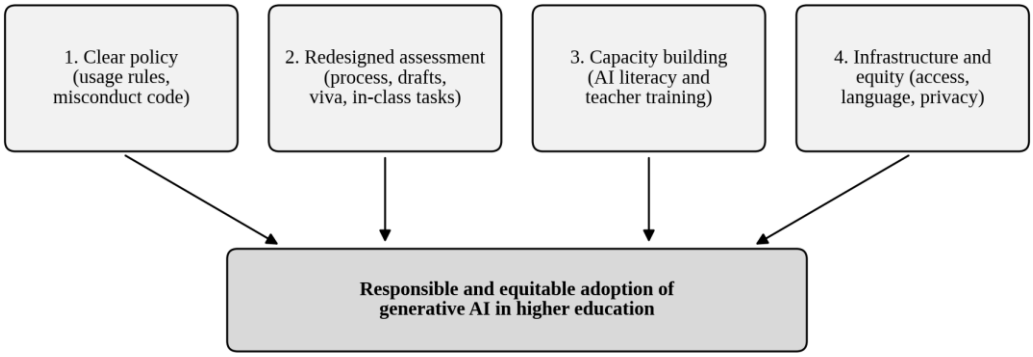



Fig. 2. Proposed framework for responsible generative AI adoption in higher education.

### *H. Implications for Indian Higher Education*

For Indian institutions, the findings suggest that policy alone is not enough. The infrastructure gap between urban and rural institutions, the limited teacher training and the dominance of English in AI tools can all reduce the benefit of generative AI for the students who need support most [5]. Institutions with good connectivity may move quickly to AI-supported teaching while others are left behind, so adoption plans should include basic digital access and training before advanced tools [5]. At the same time, the privacy concerns raised in [1] and [2], together with the weak enforcement described in [5], mean that institutions should be careful about which student data they share with commercial AI platforms.

## VIII.RECOMMENDATIONS

### *A. For Institutions*

Institutions should create clear and consistent AI policies and update their misconduct rules so that students know which uses of AI are allowed [1]. Students may be asked to report which tools they used and for what purpose, although checking this needs extra resources [1]. The policy should be consistent across modules, so that a use allowed in one course is not banned in another without explanation [1]. Institutions should also consider appointing someone to coordinate the transition [1].

### *B. For Teachers and Assessment Design*

Teachers can redesign assessments to focus on analysis, process, drafts and reflection and not only on the final product [1]. Project-based work, oral exams and in-class tasks are less open to AI misuse [1], [4]. AI can also serve as a teaching aid, for example when students are asked to evaluate or critique AI-generated answers [1], [5]. Teachers should receive training so that they understand the capabilities and limits of these tools [3], [13].


(This work is licensed under a Creative Commons Attribution 4.0 International License.)

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 15 Issue 11 , November - 2026

### C. For Students

Students should be taught to treat AI output as a draft that must be verified, since models can produce false information and fake references [1]. Basic AI literacy, including awareness of bias and privacy, should be built step by step into the curriculum [1], [2]. Mijwil et al. add that AI tools support human work but cannot replace human expertise and critical thinking [2].

### D. A Checklist for Responsible Use

Based on the points raised in the reviewed studies, students can follow this short checklist:

- Read the institution's AI policy and the instructions for each assignment before using any tool, because rules may differ between modules [1].
- Use AI output as a starting point and not as the final answer [2].
- Check every fact, number and reference, since AI can invent sources that do not exist [1].
- Keep a record of the tools and prompts used and disclose AI use where it is required [1], [4].
- Do not share personal or sensitive data with AI tools [1].
- Keep drafts and notes of your own work, since assessments increasingly look at process, drafts and reflection [1].

### E. For Policymakers in India

Policymakers should invest in digital infrastructure equally across rural and urban areas and support pilots of AI tools in multiple regional languages [5]. Universities should include AI ethics modules in teacher training and technology degrees, and EdTech developers should design tools together with teachers [5]. Stronger enforcement of data protection, along with diverse datasets and fairness audits, is also recommended [5].

### F. Suggested Order of Action

The recommendations above need not be carried out all at once. As the author's own suggestion, institutions could begin with steps that are quick and low in cost, such as publishing a clear policy, telling students and staff about the limits of AI and explaining what must be disclosed [1]. The next stage could be redesigning assessments and training teachers, which takes more time and resources [1], [4]. Longer-term work includes improving infrastructure and language support, especially in rural institutions [5], and carrying out research to check whether the changes actually work [3], [4].

## IX. CONCLUSION

This paper examined five recent studies on generative AI in higher education and sorted their findings into four main areas: academic integrity, learning opportunities, privacy, bias, copyright and ethics, and policy readiness. The review shows that generative AI can help with personalised feedback, language learning and inclusion [1], [3], but it also creates serious integrity problems that current detection tools cannot solve on their own [1], [4]. In the Indian context there are additional worries about infrastructure, language and data protection [5]. Overall, the paper suggests that responsible adoption calls for clear policies, redesigned assessments, AI literacy, teacher training and equitable access, all supported by the framework shown in Fig. 2. Study [1] urges institutions to give this transition enough resources, which means staff training and a close look at their existing programmes. Because this review draws on only five studies, its results should be treated as a starting point and not a final answer.

## X. FUTURE SCOPE

Several directions emerge from the reviewed literature. First, longitudinal studies are needed to understand the long-term effect of AI tools on learning outcomes and student attitudes [3], [4]. Second, empirical research in Indian institutions, using surveys or interviews with students, teachers and policymakers, is needed to test the trends discussed here [5]. Third, better and more reliable methods for identifying AI-generated content should be developed and tested across contexts [4]. Fourth, researchers should study how generative AI affects different student groups and how tools can be adapted for diverse learners [3], [4]. Fifth, the use of generative AI in specific teaching models, such as inquiry-based learning and entrepreneurship education, and in formative assessment for language learning and STEM subjects deserves more study [3]. Sixth, researchers can follow the questions listed in [4], for example whether transparency about detection methods affects academic honesty and how the number of integrity violations changes after institutions adopt AI tools [4]. Finally, the proposed framework can be tested and refined through case studies in colleges and universities.

## ACKNOWLEDGMENT

AI-based tools were used for language editing and readability improvement. The selection of studies, analysis, interpretations, framework and conclusions are the authors' own.

## REFERENCES

[1] M. Bobula, "Generative artificial intelligence (AI) in higher education: A comprehensive review of challenges, opportunities, and implications," *J. Learn. Develop. Higher Educ.*, no. 30, Mar. 2024.

[2] M. M. Mijwil, K. K. Hiran, R. Doshi, M. Dadhich, A.-H. Al-Mistarehi, and I. Bala, "ChatGPT and the future of academic integrity in the artificial intelligence era: A new frontier," *Al-Salam J. Eng. Technol.*, vol. 2, no. 2, pp. 116–127, 2023, doi: 10.55145/ajest.2023.02.02.015.


(This work is licensed under a Creative Commons Attribution 4.0 International License.)

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 15 Issue 11 , November - 2026

[3] O. Noroozi, S. Soleimani, M. Farrokhnia, and S. K. Banihashem, "Generative AI in education: Pedagogical, theoretical, and methodological perspectives," *Int. J. Technol. Educ.*, vol. 7, no. 3, pp. 373–385, 2024, doi: 10.46328/ijte.845.

[4] K. Bittle and O. El-Gayar, "Generative AI and academic integrity in higher education: A systematic review and research agenda," *Information*, vol. 16, no. 4, Art. no. 296, Apr. 2025, doi: 10.3390/info16040296.

[5] R. Ravichandran and P. Sasikala, "Harnessing generative AI in higher education: Opportunities, challenges, and ethical imperatives," *J. Digit. Learn. Educ.*, vol. 5, no. 1, pp. 28–40, Apr. 2025, doi: 10.52562/jdle.v5i1.1455.

[6] W. Geerling, G. D. Mateer, J. Wooten, and N. Damodaran, "ChatGPT has mastered the principles of economics: Now what?" SSRN, 2023. [Online]. Available: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4356034

[7] A. Gilson *et al.*, "How does ChatGPT perform on the United States Medical Licensing Examination? The implications of large language models for medical education and knowledge assessment," *JMIR Med. Educ.*, vol. 9, Art. no. e45312, Feb. 2023, doi: 10.2196/45312.

[8] V. S. Sadasivan, A. Kumar, S. Balasubramanian, W. Wang, and S. Feizi, "Can AI-generated text be reliably detected?" 2023, arXiv:2303.11156, doi: 10.48550/arXiv.2303.11156.

[9] W. Liang, M. Yuksekgonul, Y. Mao, E. Wu, and J. Zou, "GPT detectors are biased against non-native English writers," *Patterns*, 2023, arXiv:2304.02819.

[10] M. Khalil and E. Er, "Will ChatGPT get you caught? Rethinking of plagiarism detection," in *Learning and Collaboration Technologies*. Cham, Switzerland: Springer, 2023.

[11] J. Rudolph, S. Tan, and S. Tan, "ChatGPT: Bullshit spewer or the end of traditional assessments in higher education?" *J. Appl. Learn. Teach.*, vol. 6, no. 1, pp. 342–363, 2023, doi: 10.37074/jalt.2023.6.1.9.

[12] M. R. Karaman and I. Goksu, "Are lesson plans created by ChatGPT more effective? An experimental study," *Int. J. Technol. Educ.*, vol. 7, no. 1, pp. 107–127, 2024, doi: 10.46328/ijte.607.

[13] E. Kasneci *et al.*, "ChatGPT for good? On opportunities and challenges of large language models for education," *Learn. Individ. Differ.*, vol. 103, Art. no. 102274, 2023, doi: 10.1016/j.lindif.2023.102274.

[14] D. Kim, A. Majdara, and W. Olson, "A pilot study inquiring into the impact of ChatGPT on lab report writing in introductory engineering labs," *Int. J. Technol. Educ.*, vol. 7, no. 2, pp. 259–289, 2024, doi: 10.46328/ijte.691.


(This work is licensed under a Creative Commons Attribution 4.0 International License.)