



Intellectual Property Rights in AI-Created Educational Content: Issues and Solutions

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ABSTRACT

Educational content worldwide has undergone fundamental changes because of the rapid adoption of AI and associated technologies, which include tools such as ChatGPT, DALL-E, and Synthesia, that are also used for educational content creation. The educational capabilities that technology provides to educators for creating tailored educational materials and enhancing academic operations result in unprecedented conflicts about intellectual property rights (IPR) as well as authorship and ownership issues. This research evaluates the IPR developments regarding AI-generated educational materials by analysing the increasing difficulty of differentiating between human-made and AI-supported as well as AI-generated educational content. Most legal frameworks across the United States, European Union, China and India deny copyright protection to AI-generated material unless a human maintains significant involvement in the creative structure. The contradictions within these legal systems create major confusion for educational institutions and their educators who want to determine ownership rights, licensing agreements, and enforceability. This paper proposes a comprehensive IP framework that categorises AI-human collaboration, suggests flexible licensing systems, and implements digital watermarking and audit trail technology to maintain transparency and accountability. Several policy measures ought to be implemented, according to the author, including standardised institutional guidelines with AI disclosure requirements alongside new laws acknowledging AI-human co-authorship. The research demonstrates that the current era demands standardised measures that balance rights protection and technological progress alongside fair educational distribution in AI-enhanced education.

Keywords: Artificial Intelligence (AI), Copyright Law, Educational Content, Intellectual Property Rights (IPR), Legal Framework, Ownership Attribution

1. Introduction

1.1 The Rise of Generative AI in Education

The AI technology, especially the generative AI tools, has brought significant changes to educational institutions. Generative AI models like ChatGPT with DALL-E, along with Synthesia and more, have spread into educational applications for both designing lessons and streamlining management operations and student-specific learning solutions. These technologies use processed large datasets to create human-like content comprising text, images, and multimedia products, which require minimal human intervention, thus enabling educators to produce lecture materials, assessment tools, and course syllabi more efficiently than before (Lalanda & Roig, 2025; Sharma, 2024).

Academic institutions use ChatGPT and similar AI tools for multiple educational purposes, including assignment and lesson plan creation to formative quiz development. Synthesia and D-ID provide educators with text-to-video capabilities, which enable studio-free lecture video creation, thus promoting education accessibility (Ioannidou, Ioannidou, & Lenakakis, 2024). Such tools benefit higher education specifically because the demand for customizable large-scale content delivery continues to increase at a fast pace. The usage of AI applications extends beyond content delivery as they assist universities in assessing students and generating feedback while predicting student performance (Yuan, 2024). Educational institutions and e-

learning systems use AI to develop dynamic content modifications by analysing student cognitive patterns and conduct for creating future learning environments (Varsik & Vosberg, 2024; UNESCO, 2021).

1.2 Emergence of Intellectual Property Conflicts

The educational benefits of generative AI technologies also result in conflicts between authorship rights and copyright protection issues during IP protection. The key challenge emerges in deciding which entity holds copyright for educational content made with AI assistance or AI automation: educators, institutions or the developers of AI tools. The traditional copyright definition creates this problem because it requires human authorship and creative expression to grant protection (Wang, 2023; Chesterman, 2025). AI-generated works without human involvement remain unprotected by copyright laws in certain jurisdictions yet other regions grant authorship rights to the human user who guided the AI system while creating such content (Khachatryan 2024 and Obianyo 2025). Academic disputes about AI-assisted teaching materials, including syllabi, lecture slides, and research papers, have emerged because multiple entities, such as teachers, institutions, and software providers, assert ownership rights. The controversy that exists surrounding '*Zarya of the Dawn*, ' an AI-generated graphic novel in the United States, illustrates the urgent need to address these matters (Lucchi 2024, Crouch 2024). In reality, the disputes exceed mere conjecture. Educational institutions face challenges with their IP policies, publishing contracts, and national copyright laws because educators are starting to sell AI-generated teaching materials. The integration of copyrighted works in AI-generated materials during training or output processes creates additional legal challenges because existing rights remain unprotected by clear safeguards (Zakir et al., 2024; Gaffar & Albarashdi, 2024).

1.3 Purpose, Relevance, and Scope of the Study

The main objective of this research is to investigate the legal and ethical aspects of intellectual property rights connected to AI-generated educational materials. The primary research question focuses on determining ownership of educational content when AI systems either generate or assist in its creation. The paper explores authorship and ownership limits alongside originality boundaries when machines work alongside humans to create educational content. The affects numerous stakeholders in multiple ways. The extent of rights educators possess regarding their AI-generated content is determined by this issue. The issue also impacts educational administrators by affecting their institutional policy development, content licensing and risk management tasks. The current IP laws need immediate revision to reflect modern human-machine collaboration practices (Maharjan, 2024; Verma, 2023; Rossi & Bianchi, 2024). Educational equity experiences substantial disturbances in resource-limited settings, thanks to the legal vacuum when AI tools are employed to provide high-quality content access (OECD, 2022; UNESCO, 2021). This paper also evaluates the educational consequences that result from unbridled AI-generated content. Educational integrity suffers as a result of lack of clear authorship attribution and there is potential devaluation of human intellectual work both in educational instruction and research activities (Ioannidou et al., 2024; Hashimy & Benjamin, 2023).

1.4 Research Methodology

Having multifaceted challenges, the intersection of artificial intelligence and intellectual property (IP) rights in education requires a mixed methodology for research. As such, this study has taken a combined resource of doctrinal legal analysis and the empirical insights from educational institutions, faculty members, and legal experts. Concrete, real-world data supports in-depth analysis of legal frameworks to give context-sensitive, balanced views on authorship, ownership and institutional policy gaps.

Universe

The research draws from a broad universe comprising:

- University educators and curriculum designers engaged in AI-assisted content development;
- Legal scholars with expertise in digital copyright and intellectual property law;
- Educational professionals such as institutional administrators managing AI platform integration.

Population

The target population includes academics and professionals actively working with AI tools such as ChatGPT, Synthesia, and DALL·E, within both educational content creation and legal analysis domains.

Sample Size

This study comprised a purposively selected cohort of 80 participants, divided into two methodological streams to support the study's mixed-methods design:

• Semi-Structured Interviews (n = 30):

In-depth interviews were conducted with 30 key stakeholders possessing domain-specific expertise in AI integration and IP frameworks within education. This cohort included:

- University educators employing generative AI tools (e.g., ChatGPT, DALL·E, Synthesia) for instructional design;
- Curriculum developers tasked with embedding AI capabilities into academic syllabi;

- Legal scholars specializing in digital copyright and content ownership;
- Senior institutional administrators responsible for overseeing AI-driven educational strategies and compliance.

The purpose of these semi-structured interviews was to elicit qualitative insights into the nuanced challenges of authorship attribution, institutional policy ambiguities, and legal-ethical dimensions of AI-generated content. The flexibility of this method allowed for thematic probing and contextual understanding.

● **Structured Surveys (n = 50):**

Structured questionnaires were administered to 50 professionals across both public and private academic institutions. This sample consisted of:

- Faculty members utilising AI tools in content development, assessment generation, or adaptive instruction;
- E-learning coordinators and platform developers engaged in AI-assisted instructional delivery;
- Academic support personnel acquainted with institutional IP governance and licensing concerns.

The structured survey design facilitated the collection of standardised, generalizable data to quantify prevailing attitudes, knowledge levels, and institutional practices related to AI and intellectual property management in educational contexts.

Sampling Method

A purposive sampling strategy was used to select participants with relevant knowledge and direct engagement with AI technologies and IP issues, ensuring targeted and insightful contributions.

Data Collection Tool

- Semi-structured interview schedules were used to gather qualitative insights on institutional policies, authorship perceptions, and legal challenges.
- Structured questionnaires helped validate trends and perspectives across a wider demographic.

Data Analysis Tool

The study applies:

- Statutory laws, international treaties (such as the Berne Convention, TRIPS, and the DSM Directive), case laws and institutional regulations were analysed using doctrinal legal analysis.
- Thematic content analysis for interpreting qualitative data retrieved from interviews and surveys that allowed the extraction of common patterns and institutional practices.

In order to respond to the legal, ethical, and operational issues that may arise as a result of AI-generated educational content, it was essential to use this mixed-method approach. They provided the basis for the development of a Multilayered IP Attribution Model that presents an integrated framework of:

- 1. Human–AI Collaborative Authorship Typology** – classifying content based on degrees of human and AI contribution to clarify rights.
- 2. Contractual and Licensing Mechanisms** – proposing policies like Creative Commons licensing, institutional agreements, and release forms to reduce ownership disputes.
- 3. Technological Safeguards** – utilising digital signatures, metadata, watermarking, and blockchain records for transparent authorship tracking and dispute resolution.

In combination, these components present a scalable legal technical solution closely tied to those of the current academia and technological practices that fill an intellectual property law doctrine gap between the existing IP doctrines and the developing AI undertone teaching reality. An integrated approach such as this one facilitates the development of the Multilayered IP Attribution Model, combining the legal typologies, licensing mechanisms and technological safeguards. These layers work together to respond to the constantly evolving challenge of AI content in academia and are a tool to further clarity of authorship, ownership and policy authoring. The third layer provides technical guarantees such as digital signatures, timestamps stored in metadata, IP records stored in a blockchain and watermarking tools. In its implementation, these ensure traceability and transparency of the origin of the content and provide means for dispute resolution by institutions. Combining the layers, finally, constitutes an integrated, adaptive model of legal, ethical and operation complexities involved in the use of AI generated educational content that fits legal frameworks with enhance technological reality in academia.

2. Conceptual and Theoretical Framework

2.1 Intellectual Property Law: Concepts of Authorship and Originality

Historically the foundation of Intellectual Property and copyright law relied on human original artistic work. The Berne Convention, 1986 for the Protection of Literary and Artistic Works, through Article 2 protects “literary and artistic works” that originate from human authors. The World Trade Organization's TRIPS Agreement through its administration of enforceable rights requires both originality and human creator involvement as essential elements. The U.S. Copyright Act (17 U.S.C. § 102) establishes protection requirements

for works that need to be “fixed in a tangible medium of expression” and “created by a human author” (Khachatryan, 2024; Verma, 2023). The evaluation of IP claims now depends heavily on the identification of a fundamental human creativity threshold. The courts together with scholars interpret this threshold to demand intellectual effort along with decision-making and intentional action (Wills, 2021; Obianyo, 2025). The basic elements of human intellect that underpin copyright protection are destroyed by AI-generated content. Generative AI tools differ from spreadsheet and word processing tools by showing the capability to manage independent creation of original content that displays human-like writing while requiring minimal human involvement (Hashimy & Benjamin, 2023). The process of identifying works' authors faces difficulties because courts must decide if computers can produce “original” content in the human sense (Chen, 2023; Polukhina & Tarasiuk, 2024). Copyright offices throughout the United States, European Union, and the United Kingdom have officially denied copyright protection to works that lack human authorship. The U.S. Copyright Office denied a work registration because it emerged exclusively from an AI system while affirming that “only works created by human beings are entitled to copyright protection” (Lucchi, 2024; Rossi & Bianchi, 2024). The Berne Convention and TRIPS along with the U.S. Copyright Act and other national laws together establish that human authorship and originality are essential requirements for IP protection (Table 1). The definitions create obstacles for educational content produced by AI systems because they require human creative input. The UK provides some copyright protection for computer-generated works, yet most countries deny copyright protection to AI-generated outputs. The absence of legal protection for AI-generated educational content creates an essential problem in education because AI tools increasingly produce syllabi lectures and assessments. The Table 1 demonstrates the necessity for IP framework development to support human-AI collaborative content generation (Wills, 2021; Wang, 2023; Lucchi, 2024).

Table 1: Comparison of Legal Definitions of Authorship and Originality

Legal Framework	Definition of Authorship	Originality Requirement	Applicability to AI
Berne Convention	Human author with intellectual contribution	Independent creation with minimal creativity	Excludes non-human authors
TRIPS Agreement	No explicit definition; relies on national laws	Protection of expressions, not ideas	Silent on AI; defers to state practice
US Copyright Act	Must be “created by a human author”	Fixed in a tangible medium; minimal creativity	AI-generated works not protected
UK Copyright Law	Human author or the person who makes arrangements	Originality lies in skill, labour, or judgment	Offers limited protection to AI works
EU Directive (DSM)	Original intellectual creation by an author	Expression of author’s free and creative choices	No explicit recognition of AI authors

2.2 Applying IP Principles to AI-Generated Educational Content

Educational settings face exceptional challenges regarding these traditional IP principles because AI consistently produces syllabi and assessments, together with lecture slides, learning simulations, and video lectures (Yuan, 2024; Sharma, 2024). AI-generated artworks and inventions function separately from their origin, while educational content requires institutional networks that engage educators, along with departments and platform providers, as well as students. Such complex environments prove arduous for determining ownership or IP rights (Ioannidou et al., 2024; Ezeh et al., 2024). The majority of current IP legislation fails to provide definitive solutions regarding works that AI systems help create. When educators employ ChatGPT to generate lesson plans alongside them or create automated quizzes, what role does the educator play in authorship? The institution holds ownership rights to the output according to work-for-hire principles. AI tool providers maintain certain proprietary rights according to their service terms. (Zakir et al., 2024; Maharjan, 2024). The unclear nature of intellectual property rights becomes more pronounced when multiple teachers work together to provide prompts and content for AI refinement in collaborative platforms. The licensing arrangements that AI tool vendors enforce frequently include broad and unclear provisions that permit owners to seize IP rights along with the generated platform data. The consequences are severe for educators who depend on these tools to generate customized materials because such content poses problems when transferred to institutional learning management systems or open educational repositories (Fontana, 2024; Wen, 2024). The unresolved nature of data ownership, derivative work rights, and distribution rights exists in these situations (Kazimi & Thalwal, 2024).

Table 2 presents data about the widespread usage of AI tools like ChatGPT, DALL·E and Synthesia for educational content generation, which includes syllabi, quizzes, together with videos and visuals. The use of these applications creates multiple complicated IP issues that need to be solved. When AI technologies produce new images, they sometimes duplicate established copyrighted designs and assessments helped by AI systems raise uncertainties about creators and derived work rights. Educational institutions using institutional licenses

and external AI platforms lose clarity regarding ownership rights, as illustrated in the table. The unclear nature of content rights in academia requires better and clear policies because AI now plays an active role in developing educational materials (Sharma, 2024; Yuan, 2024; Wen, 2024; Zakir et al., 2024).

Table 2: Examples of AI Use in Educational Content and IP Ownership Challenges

AI Tool	Educational Application	Potential IP Issue	Ownership Dilemma
ChatGPT	Drafting syllabi and quizzes	Co-authorship with human prompt engineer	Is the educator or institution the author?
DALL·E	Generating lecture illustrations	Output may mimic copyrighted art styles	Copyright infringement or fair use?
Synthesia	Creating explainer videos	Use of synthetic avatars and AI voiceovers	Rights over synthesised likeness and content
Canva + Magic Write	Visual and textual content creation	AI + template content leads to unclear derivation	Educator vs platform IP claims

2.3 Ownership Dilemmas in Human-AI Collaboration

The traditional principles encounter exceptional difficulties in educational settings because AI generates complete syllabi alongside assessments, lecture slides, learning simulations, and video lectures (Yuan, 2024; Sharma, 2024). While educational content often depends on institutional networks to connect educators, departments, platform providers, and students; AI-generated artworks and inventions tend to operate more independently, often detaching from their creators and traditional structures. Complex environments create significant challenges when it comes to establishing ownership or IP rights (Ioannidou et al., 2024; Ezeh et al., 2024). The present IP laws lack clear guidelines about how to handle creations made possible by AI systems. Educators who use ChatGPT to develop lesson plans with assistance or generate quiz systems through automation must define their level of authorship in these processes. The institution maintains ownership rights of the output under work-for-hire principles. AI tool providers retain specific rights to their products as defined by their service agreements. (Zakir et al., 2024; Maharjan, 2024). The definition of intellectual property rights remains ambiguous when teachers collaborate to feed prompts and content into AI refinement systems in shared platforms. AI tool vendors enforce licensing arrangements that contain broad and unclear provisions that allow owners to acquire IP rights and platform data generated from their use. Educational tools that depend on AI-generated content face severe consequences because this material creates problems when moved to institutional learning management systems or open educational repositories (Fontana, 2024; Wen, 2024). These situations present unresolved questions regarding data ownership, derivative work rights, and distribution rights (Kazimi & Thalwal, 2024).

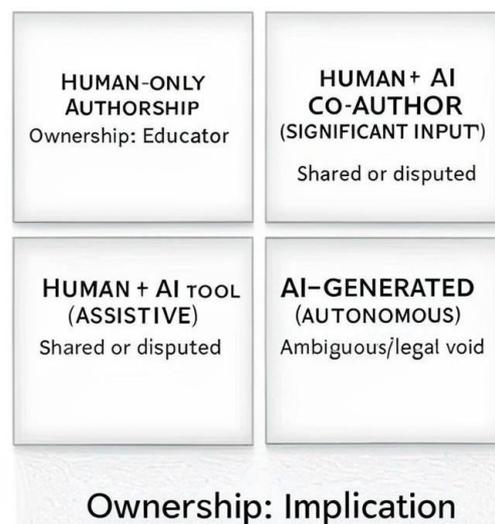


Figure 1: Human–AI Collaboration Spectrum in Educational Content Creation

The human–AI collaboration spectrum shown in Figure 1 divides educational content creation into four zones which represent different human and AI input levels. The educator maintains full ownership of content that they create entirely on their own. The rising level of AI participation transforms ownership disputes into complex situations. Content emerging from autonomous AI operations exists in a legal ambiguity because there is no explicit author behind it. The spectrum provides clarity about IP implications for educational outputs by showing their positions while demonstrating the necessity for detailed legal and institutional policies (Chesterman, 2025; Sharma, 2024).

University institutions face heightened challenges regarding IP ownership because their policies can claim rights to materials created by faculty members who use institutional platforms or resources. The ownership rights of educational outputs created using AI-powered tools under university licenses can be claimed by both the faculty member and their institution according to Yuan (2024) and Lalanda and Roig (2025). When policies remain unclear there emerges an area of legal uncertainty which causes disputes (UNESCO, 2021; OECD, 2022). New case studies regarding this phenomenon have started to appear. Some educational institutions have implemented policies that mandate disclosure and registration of content made with AI tools, especially when the content needs external commercialisation or publication. Such institutions now test dual content ownership arrangements between faculty members and their educational facilities as well as AI developers (Marchenko et al., 2024; Slattery, 2024). The absence of standardised multilayered guidelines for human-AI collaboration and private-institutional use cases emphasizes the need for immediate development of such frameworks (Khodyko 2024, Yuan 2024). Digital education startups alongside online platforms Coursera and Udemy experience an aggravated version of this issue. Educational content creators who use AI as independent contractors face an unclear situation regarding ownership rights of their educational products since platform operators, AI developers and educators may each claim different rights (Verma, 2023; Ioannidou et al., 2024). The absence of clear legal frameworks in these settings leads educators and learners to face further rights restrictions because Terms of Service functions as default policy.

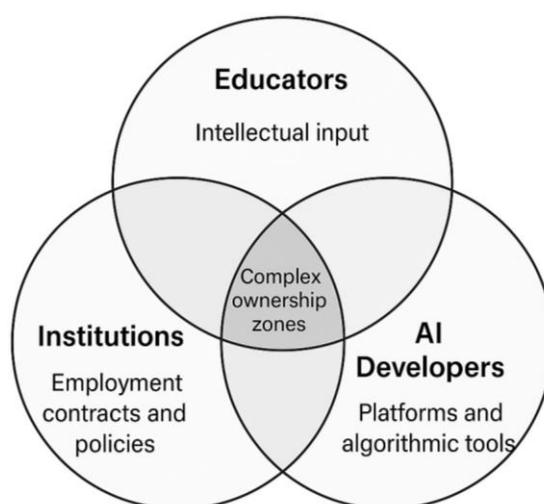


Figure 2: Stakeholder Matrix for AI-Generated Educational Content with Ownership Dimensions

The Venn diagram in Figure 2 demonstrates refined ownership relationships that exist between Educators, Institutions and AI Developers during AI content generation for educational purposes. Educators supply intellectual content to the process while institutions create policies and employment structures and developers use algorithmic tools and platforms for creation. All three groups possess ambiguous legal power in the middle part of the diagram known as “Complex ownership zones.” The diagram helps explain why academics face difficulties with present IP systems regarding AI collaboration while emphasizing the necessity of precise attribution rules and individualised licensing agreements for stakeholders (Maharjan 2024, Obianyoy 2025, Yuan 2024).

3. Comparative Legal Approaches to AI and Copyright

3.1 The United States

The United States has officially declared its opposition to extending copyright protection to AI-generated content unless it includes human authorship. According to the U.S. Copyright Office the law grants copyright protection only to works created by human authors as per Title 17 of the U.S. Code (Crouch, 2024; U.S. Copyright Office 2014, §313.2). The *Zarya of the Dawn* case stands as the most notable among several denials of copyright protection because the Office denied copyright to comic book artwork created through the AI tool Midjourney (U.S. Copyright Office 2023). The Office denied authorship status to the image because it lacked human creative control during its creation process (Lucchi, 2024; Wang, 2023; U.S. Copyright Office 2023). Educational content development with AI assistance remains in a legal uncertainty under U.S. policy because the policy does not address situations where AI moves beyond assistance to become a co-author. Educational institutions have difficulty establishing sole ownership of AI-processed materials because courts currently lack agreement on mixed authorship standard (Wills, 2021; Verma, 2023).

3.2 European Union

The European Union presents a different system that maintains a level of complexity. The EU Artificial Intelligence Act, 2024 (AI Act) stands as one of the most extensive regulatory frameworks for AI systems while it contains provisions that indirectly influence educational copyright law. The Act divides AI systems into risk categories, yet demands clear disclosure about AI-generated content which proves vital for educational authorship identification (Marchenko et al., 2024). The Directive of Copyright under Digital Single Market 2019 (DSM Directive) protects human author rights and genuine originality at the same time. The Act provides expanded possibilities to mine copyrighted material through text and data mining methods that prove vital for AI training purposes. National courts need to determine ownership and copyright bound AI-generated works because the DSM Directive fails to offer clarification on these matters (Polukhina & Tarasiuk, 2024; Rossi & Bianchi, 2024). The EU demonstrates restraint when it comes to educational matters. Educational software platforms such as Moodle and e-learning environments continue embracing AI technology yet lack standard regulatory rules about intellectual property rights distribution between teachers and AI systems particularly when they utilize tools like ChatGPT or DALL-E during course content development (Sharma, 2024; Yuan, 2024).

3.3 China and India

The laws regarding AI-generated content show different approaches between China and India because of their distinct political environment and their different stages of regulatory development. Chinese authorities accept AI-generated content when human creators actively participate in the creative process. The legal system grants copyright protection to AI-assisted works when humans maintain creative oversight throughout the input and refinement process according to Khachatryan (2024) and Maharjan (2024). The legal protection of educational learning modules developed with generative AI extends to educators' contributions according to Chinese copyright law.

However, the legal position regarding AI authorship in India remains unclear at present. The Copyright Act of 1957 lacks specific provisions about AI while the Indian judiciary remains undecided about AI authorship. The Indian government stands with the United States in denying copyright protection for non-human creations while NITI Aayog and the Ministry of Electronics and IT lead ongoing policy discussions (Obianyo, 2025; Kazimi & Thalwal, 2024). Educational institutions struggle to address legal boundaries regarding AI content generation since AI tools now automate platform and MOOC material creation thus creating ownership ambiguities.

The data presented in table 3 shows the difference in judicial treatment of AI generated contents across the world. Educational institutions face uncertainty regarding their rights to AI-assisted outputs because both the United States and India exclusively recognize human authors as copyright holders. Security and adherence to originality rules in the EU and UK institutions remain strict but educators can take advantage of specific flexibilities. China adopts an inclusive policy by giving rights to AI-generated content when humans take sufficient part in its creation. The mismatch of laws across digital borders creates noticeable implications that affect educational content producers and institutions that work across digital borders.

Table 3: Comparative Overview of National Approaches to AI and Copyright

Jurisdiction	Stance on AI Authorship	Key Legal Developments	Implications for Education
USA	Only human authorship is recognized	U.S. Copyright Office denial for AI generated content (e.g., <i>Zarya of the Dawn</i>)	AI-generated syllabi, quizzes not protected
EU	No recognition of AI as author; emphasizes originality	Directive on Copyright under Digital Single Market, 2019 (DSM Directive)	Institutions must disclose AI-generated content
UK	Conditional recognition for computer-generated works	Copyright, Designs and Patents Act 1988 (Section 9(3))	Work-for-hire doctrine applies in education
China	Allows copyright if human contributes meaningfully to the AI generated work	Judicial precedents supporting limited protection for AI outputs	More permissive stance toward AI-education content
India	No explicit protection for AI-generated works	Draft policies on AI ethics; Copyright Act 1957 silent on AI	Unclear IP ownership in universities and e-learning

3.4 Institutional Policies in Education

Higher education institutions have taken on regulatory roles because no legal standards exist and they establish their own systems to handle AI-generated content. The intellectual property policies of numerous universities across the U.S. and Europe now claim ownership of content produced through institutional resources including

AI tools acquired through institutional licenses (Slattery, 2024; Yuan, 2024). Educational institutions have established policies that supersede standard faculty authorship practices when AI tools extensively transform or create course materials. Academic freedom exists as an ongoing controversial topic. The ownership rights of instructors to their syllabi and lecture content become uncertain when they use institution-funded AI platforms to create their materials because work-for-hire doctrines can potentially challenge their claims. Institutions require AI disclosure statements, particularly for content distribution or monetisation purposes. The governance models of educational institutions remain unclear about the distinction between AI-assisted content and AI-generated content (Ioannidou et al., 2024; Wen, 2024).

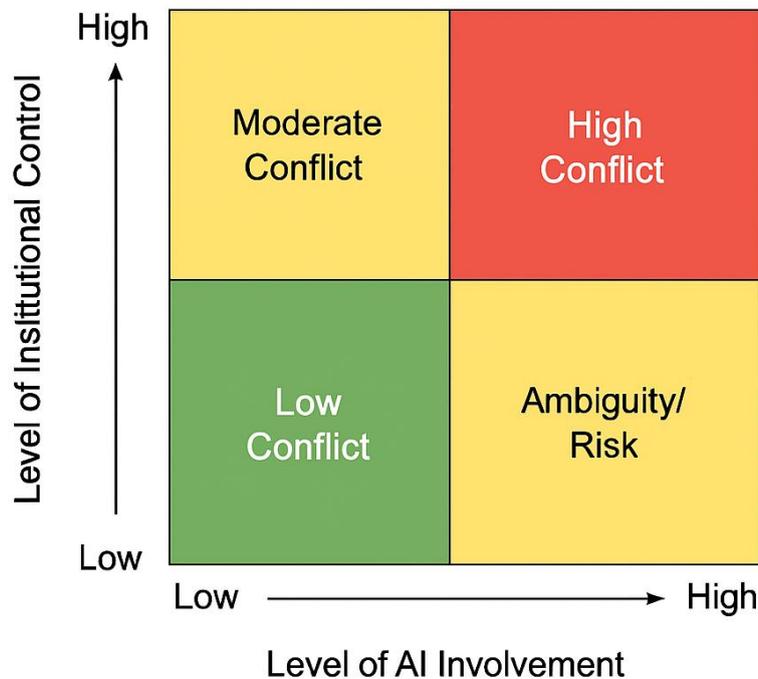


Figure 3: IP Rights Conflict Zones Based on AI Involvement and Institutional Policy Strength

Figure 3 shows that IP-related conflicts become more intense when institutions exercise extensive control over research while artificial intelligence is extensively used. Educators operating in the “red zone” experience significantly increased chances of losing their authorship rights alongside potential legal conflicts. Developments that combine low AI adoption with weak institutional management policies will experience minimal conflicts. The areas between red and green zones indicate situations with unregulated institutional policies or AI systems operating without human supervision which leads to unclear situations and legal possibilities. The matrix shows how the combination of institutional policies and extent of AI usage, matter in establishing the types of IP claims that may arise. Institutional governance must take proactive measures to define authorship rules and licensing standards and rights assignment rules because AI and education continue to converge (Ezeh et al., 2024; Sharma, 2024; Chesterman, 2025).

4. Results and Discussion

4.1 Key Findings from Comparative Analysis

Lawmakers across different jurisdictions demonstrate inconsistent approaches when it comes to recognising co-authorship involving AI systems during the review of legal and institutional approaches to intellectual property rights. Under prevailing human authorship interpretations both in India and the United States all AI-created educational materials fall outside the copyright boundary. China and United Kingdom have established flexible policies which recognize machine-generated content when humans provide specific guidance (Maharjan, 2024; Khachatryan, 2024; Obiany, 2025). The absence of clear regulatory guidelines about mixed-authorship scenarios remains universal across jurisdictions especially in education since human and AI inputs work closely together. The complexity of human-AI collaboration in academic content creation remains beyond the current evolution of most national IP frameworks. Several new institutional practices have started to provide direction. Several educational institutions across the EU and North America have started developing special AI-related intellectual property provisions for both employment agreements and learning platform service terms. Such guidelines establish boundaries for AI-assisted content by assigning ownership rights to institutions when their licensed AI tools produce content (Slattery, 2024; Yuan, 2024).

4.2 Stakeholder Perceptions and Concerns

Educators and institutional analysts together with IP professionals report significant anxiety about including AI tools into academic content creation. Educational staff members specifically pointed out that institutional generative AI tools strip them of their creative ownership rights. Educators preferred to skip the application of advanced AI functions to maintain command over their academic resources. Administrators recognized the absence of structured policies which define both ownership rights and procedures for AI-generated materials in research proposals, syllabi and course portals. The legal experts pointed out that unclear attribution rules along with possibilities of future copyright disputes have caused experts to feel greater risks. AI implementation experiences growing resistance from academic institutions because of unclear legal parameters and the absence of protective frameworks according to Gaffar & Albarashdi (2024), Sharma (2024) and Wen (2024). The current situation emphasizes the necessity for all educational institutions to establish uniform attribution and licensing standards.

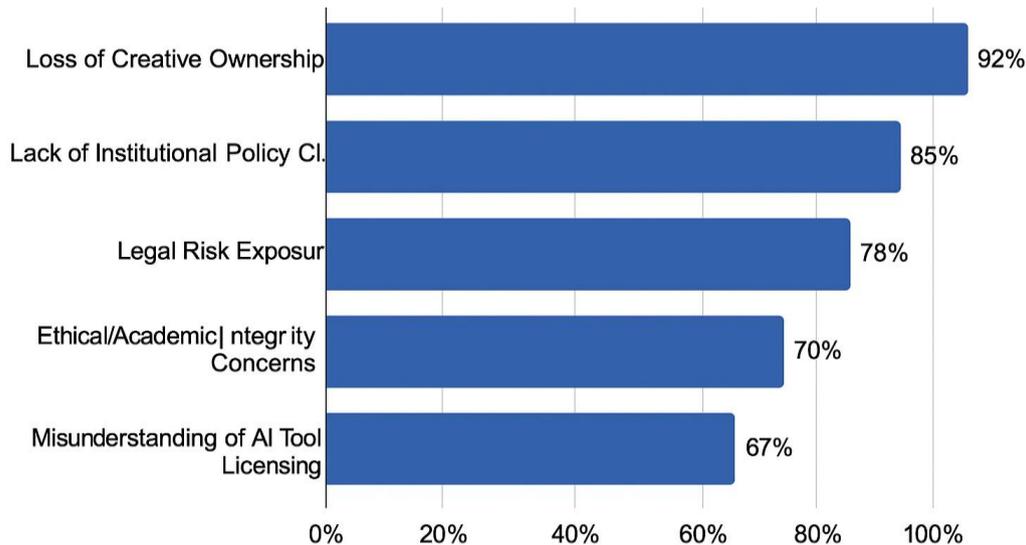


Figure 5: Educator's Concerns Regarding AI-Generated Educational Content

Evidence in Figure 5 demonstrates that Educators have various extensive concerns about AI-created educational resources. Most educators strongly fear losing their creative control yet administrators have mainly focus on institutional policy shortcomings. Legal experts observed the risk of copyright disputes because copyright authorisation and authorship identification remain indistinct in these situations. Majority Educators commonly fail to comprehend or properly evaluate the licensing requirements that come with their AI tool usage. The figure depicts the different yet intersecting fears of stakeholders which confirms the necessity of clear IP guidelines and open AI usage information to establish trust while lowering obstacles to implementation.

4.3 Copyright Challenges in Specific Educational Outputs

Through detailed analysis, this study identified critical copyright challenges across three key categories of educational content commonly influenced by generative AI:

(i) Lecture Slides and Notes

Educational professionals utilise AI technology to develop lecture plans and improve their slides and create quiz questions. AI tools help educators become more efficient but they also produce complete decks and summaries from educator instructions. The line between content created by AI and teacher-authored work becomes difficult to distinguish since AI produces both written and designed outputs. The absence of clear authorship policies in these institutions creates confusion about who owns the rights to slides which AI systems partly created because educators claim authorship yet institutions or AI providers may assert their own rights to the material. Educators must also exercise caution in using AI tools because their training data comes from open internet sources which could trigger copyright infringement or derivative work legal consequences (Lucchi, 2024; Yuan, 2024).

(ii) Syllabi and Course Planning Documents

Instructors typically consider syllabi as their academic possessions. When instructors employ AI tools to automate teaching objectives or merge learning objectives with policy requirements and educational outcomes the ownership terms become unclear. Syllabi may become institutional intellectual property according to policy when they are generated through institutional AI platforms or under full-time employment agreements. Instructors who transition between institutions face disputes when they want to reuse syllabi that were assisted

by AI tools. These issues remain unresolved in the long term since there is no clarity in contractual clauses and they get settled through informal attribution or licensing mechanisms (Obiany 2025, Wills 2021).

(iii) Multimedia Content

The AI tools Synthesia, Pictory and Lumen5 empower instructors to manufacture animated instructional materials along with voice-added lessons and summary video content. Synthetic voices alongside virtual avatars found in these tools make it difficult to identify the original author. Educators who use these assets through their licensing agreements might not understand that the agreement does not provide them with complete ownership rights to the final product.

The most common challenges include:

- AI platform providers maintain derivative ownership rights to their platform content.
- The unauthorized use of synthetic visual and audio assets occurs throughout multiple courses.
- Educational institutions struggle with fair use interpretations especially when they use AI to transform open-access materials.
- The difficulty to enforce licenses and the poor legal defensibility result from assets lacking proper metadata and watermarks despite fair use application.

AI-assisted educational content exists in a legally doubtful area because precise limits concerning authorship rights and ownership transfers through licensing and fair use cannot be established. The research data confirms the necessity of immediate policy changes involving multiple stakeholders who must use specific contracts and technological tracking systems as described in Section 5.

Various educational products created using AI trigger issues for copyright and ownership laws as documented in Table 5. Educational personnel frequently face attribution-related conflicts because AI-produced work creates confusion about who contributed what between instructors and technologies. The transfer of syllabi between institutions creates complex ownership disputes because some institutions maintain ownership rights through contractual agreements. The use of multimedia tools with AI creates new risks regarding licensing and derivative content because of assets generated by AI. Each educational content type comes with its distinct set of legal vulnerabilities according to the data in the table, which underscores the necessity for precise institutional IP structures and set attribution systems in AI-supported academic systems.

Table 5: Copyright Challenges in AI-Generated Educational Outputs

Educational Output	Common AI Applications	Key IP Challenges	Ownership Ambiguity
Lecture Slides & Notes	Content generation, visual design, summary creation	Attribution confusion, platform reuse rights, derivative work issues	Educator vs. AI tool developer vs. institution
Syllabi	Learning outcome automation, structure templating, alignment tools	Disputes over instructor mobility, unclear work-for-hire clauses, informal reuse	Often institution-claimed under contracts.
Multimedia Content	AI-based animation, synthetic voiceovers, auto-generated videos	Synthetic asset licensing, fair use misconceptions, derivative ownership by AI vendors	Educator unaware of restrictions/licensing Educator vs. AI tool developer

5. Recommendations and Conclusion

5.1 Policy Recommendations

A strategic policy transformation for generative AI education implementation must take place at national institutions and educational establishments. Education ministries and governments must develop standard national guidelines to govern AI use in academic material production. These guidelines must:

- Lay down the boundaries that define AI support for teaching and learning, as it needs a clear definition.
- Establish specific copyright rules to categorise content produced by AI systems.
- Encourage institutions to supply standardised formats for licensing agreements, together with authorship statements and disclaimers.
- Require schools and universities to modify their IP policies by adding explicit rules for AI-generated content.
- Require academic publishing and teaching materials to include statements about AI usage, while academic authors need to disclose AI involvement.
- The policies need to define ownership rights regarding AI-assisted syllabi and multimedia content and assessment tools.

The guidelines also need to establish different categories for AI-human co-authorship relationships that match the typologies described in Section 5.2. The implementation of such policies will support academic freedom while handling legal uncertainties and reducing institutional disputes while upholding ethical standards of AI-assisted teaching methods.

5.2 Proposed Multilayered IP Attribution Model

The research constructs a Multilayered IP Attribution Model dedicated to academic settings that implement AI technologies to create educational content or receive assistance for the same. The model consists of three interconnected layers, which include authorship typology, contractual and licensing mechanisms, and technological solutions that work together to establish legal, ethical, and operational clarity.

(i) Human–AI Collaborative Authorship Typology

The beginning layer of the model groups educational content involving AI based on the combination of human control and autonomous AI operations. The typology system helps educators, institutions, and policy-makers determine ownership rights by showing how AI supports content development.

The typology presents three separate categories as illustrated in Table 6.

Educators who develop content independently without AI support create Fully Human-Created Content. The educator maintains copyright authority for their work unless their employer follows work-for-hire policies. The use of artificial intelligence to assist human authors in tasks including grammar correction, layout design, and graphical illustration creation without replacing human ingenuity matches the category of AI-Assisted Human Authorship. The educator remains the author of their work while needing to state AI involvement to prevent potential conflicts about ownership or attribution. When the content consists mainly of AI-generated content that emerges from AI algorithms after receiving prompts or minimal human direction, the ownership structure becomes intricate in these cases because institutions or multiple parties might share rights to the content, especially when the content is created through institutional systems or contractual arrangements. In such cases, mandatory disclosure about the AI-generated content has to be in place. Along with, contracts must specify with reasonable clarity about IP attribution in predominantly AI-generated work.

Table 6: Human-AI Collaborative Authorship Typology

Authorship Category	Human Involvement	AI Role	IP Holder(s)	Rights	Recommended Action
Fully Human Created	100% – content conceived and developed by human	None	Educator (or institution, if work-for-hire)	(or if)	Standard copyright
AI-Assisted Human Authorship	High – AI used as tool under human control	Supportive: grammar, visuals, outlines, etc	Educator (with potential co-claims)	(with co-)	Attribution encouraged
Predominantly AI-Generated	Low – human prompts, minimal input	Primary content generator	Disputed or shared (case/context specific)	or	Disclosure + contractual clarification

Adapted from Wen (2024); Sharma (2024); Maharjan (2024); Gaffar & Albarashdi (2024)

This typology provides foundational classification for content, which enables institutions to base their policies and educator decisions on AI collaboration types. The typology serves as an organisational standard to maintain steady academic practices regarding rights management and academic integrity.

(ii) Licensing and Contractual Solutions in Education

The second part of this model explores legal systems and administrative procedures which enhance the clarity and decrease ownership conflicts between individuals. Standards in licensing laws are necessary because AI-generated authorship remains unclear. Three primary solutions are proposed in this regard:

- Educational institutions should promote Creative Commons (CC) licensing through encouraging content creators to adopt CC-BY and CC-NC licenses to achieve reliable usage in academic environments.
- Universities and schools need to modify their employment contracts, staff guidelines and platform terms of use to establish clear guidelines about AI-created or AI-enhanced content ownership, sharing and monetisation rights.
- Educational institutions should implement Teacher Release Forms and Attribution Agreements to establish ownership rights for educators who work with institutional AI resources or team projects. These agreements ensure legal protection against both present and future claims from external sources as well as disputes from third parties. The establishment of written agreements serves to protect institutions from legal risks, yet maintains academic privileges and reveals all institutional procedures.

(iii) Technological Watermarking and Audit Trails

The third layer uses digital infrastructure to guarantee traceability and security combined with accountability for content creation operations. This includes:

- The system performs two automatic functions by attaching digital signatures while embedding metadata that contains timestamps with author information alongside AI assistance indications.
 - The use of blockchain-based IP Records produces unalterable, decentralised records that track human and artificial intelligence contributions throughout document versions.
 - AI-Assisted Watermarking embeds advanced tracking codes into visual and textual outputs to show AI-generated or AI-assisted content status, which Turnitin and GPTZero systems currently test.
- The tools establish concrete records that demonstrate the source of content while giving institutions oversight capabilities of AI systems and offering educators a system to prove or reject authorship disputes. This three-layered model provides a flexible solution to fill the legal gap that occurs when educational content originates from AI systems. The model merges classification methods with technology verification alongside licensing procedures to create an expandable solution for rights management during growing human-AI educational collaboration.

5.3 Legislative and Technological Solutions

The legal system requires immediate education-focused model laws that should support hybrid authorship while establishing complete guidelines for AI content management. The proposed model laws should derive elements from current frameworks such as the Berne Convention, DSM Directive and TRIPS, while including:

- Definitions of AI co-authorship;
- Provisions for moral rights of human contributors;

The licensing standards should define how AI content can be used by the public and commercial entities. Technological solutions alongside ones for enforcement must be simultaneously developed and adopted as discussed in Section 5.2, which includes integrating:

- (i) Tracking systems operated by computers that document both human work alongside machine output through metadata.
- (ii) Digital watermarks, along with blockchain IP registries, which help to track ownership and origin because they provide verification.
- (iii) AI audit dashboards, which function as platforms to track content creation processes that spread across institutional platforms. Such systems would safeguard writers as well as provide legitimate documentation that facilitates legal defences and organisational accountability while ensuring academic clarity in the digital learning environment.

5.3 Future Directions

The increasing intelligence and autonomy in artificial intelligence systems will create escalating intellectual property-related problems. Educational content creation will advance through the development of standardised international IP standards for AI. The WIPO together with UNESCO and OECD need to direct joint initiatives to establish uniform legal frameworks between jurisdictions regarding authorship rights, educational licensing and fair use regulations. After considering the present debates researchers need to explore AI ethics, moral rights and academic integrity. For instance, in every academic paper and published lecture, educators should reveal their use of AI technologies. Students also have the right to know whether their educational material originated from AI systems. What steps should be taken for maintaining educators' moral rights, together with their academic reputation, when using AI in teaching? The solutions answered will determine both academic trust levels and human values in academic fields.

5.4 Conclusion

This paper has analysed the complex and unclear nature of intellectual property rights that exist in AI-generated educational materials. Traditional IP frameworks prove inadequate when applied to human-AI collaborative work in academic settings, according to present research. An IP Attribution Model refurbishes existing approaches by integrating written content assessment methods with contractual agreements, along with technological solutions. The proposed solutions will work better if legislative bodies, institutions and partners from different countries actively join forces to support their implementation. A forward-thinking IP framework should be developed to provide an ethical system that includes all stakeholders while delivering appropriate responses for AI-enriched educational practices. Educators and learners, along with their institutions, would be able to fully utilise the generative AI potential only if intellectual and creative rights are protected in this digitally evolving academic world.

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