Artificial Intelligence in Education: Analysis and Assessment of Legal Knowledge Using AI Tools

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ABSTRACT: This study explores the ethical and legal implications of integrating artificial intelligence (AI) into science and mathematics education, with a specific focus on legal pedagogy in the Central Asian context. The primary aim is to analyses how AI technologies intersect with existing educational and legal frameworks and to investigate the perceptions of educators and students regarding AI's use in academic environments. The research addresses a notable gap in global literature by incorporating perspectives from Uzbekistan, Kazakhstan, and Kyrgyzstan—regions often underrepresented in AI and education discourse. A mixed-methods approach was employed, combining a structured questionnaire distributed to 341 participants and a qualitative assessment of open-ended responses. The study examined ethical concerns such as algorithmic bias, transparency, and student privacy, as well as legal dimensions related to consent, data protection, and institutional responsibility. AI tools used in legal education were evaluated through both user experience and pedagogical effectiveness, and results were categorized based on demographic variables such as age, gender, occupation, and prior AI exposure. Findings reveal substantial optimism toward AI's capacity to personalize learning and enhance analytical thinking, though participants expressed strong concerns about ethical oversight, legal ambiguity, and unequal access to technology. The study's significance lies in its contextual specificity and the development of a regionally grounded framework for ethical AI deployment in education. Recommendations include clear institutional guidelines, targeted teacher training, and the adoption of AI systems that align with legal norms and moral standards in education. The study contributes a practical roadmap for policymakers and educators navigating AI adoption within diverse legal traditions.

Keywords: Artificial Intelligence, Education, Legal Knowledge, Assessment.

I. INTRODUCTION

This article presents a structured AI-based framework for analyzing and assessing legal knowledge in educational settings. The primary goal is to facilitate the evaluation of pragmatic soundness in legal content, focusing on aspects such as direct effect, mutual recognition, and compliance with EU Regulations. By utilizing a tailored AI toolkit—including features like Evidence-Based Scoring and visual radar charts—the system enhances the objectivity and precision of legal assessments.

The approach has been tested across multiple case examples, offering practical insights into real-world applications of legal knowledge. Additionally, the paper emphasizes the importance of integrating linguistic

resources and training mechanisms to support law students and educators. This ensures legal education remains responsive to the evolving demands of the legal profession while maintaining consistency and quality standards.

1. BACKGROUND AND RATIONALE

Artificial Intelligence (AI) technologies present an innovative and promising solution to the myriad challenges faced within the legal field today, bringing forth a variety of advanced tools capable of conducting functional analysis as well as comprehensive assessments of legal knowledge that are already available in the market. These sophisticated tools possess the remarkable potential to systematically dissect the intricate reasoning that is deeply embedded within legal texts, and they can effectively simulate the evaluative processes that seasoned lawyers engage in when they utilize legal reasoning in their work. By automatically applying well-defined and established models of argumentation, such as the well-known Toulmin model, to any given legal text, these AI tools have the ability to enhance objectivity and significantly accelerate the analytical process compared to traditional and often slower methods of text analysis employed in the legal domain. This exciting area remains largely unexplored within the existing academic literature, making it crucial to address this notable gap, especially given that the analysis of legislation, regulations, and case law is routinely performed on a daily basis around the globe. This work is undertaken not only by legal professionals but also by lay citizens who seek to better understand complex legal documents they encounter. This paper's primary aim is to provide a thorough and structured review of the essential legal knowledge that is frequently valued and required in higher education law degree programs. It also aims to demonstrate an automatic analysis of that critical knowledge utilizing a sophisticated smart text reader. Through this study, a comparison is made between the functionality of this AI-driven approach, which is based on established models of legal argument analysis, and the traditional methods that are regularly employed by both students and legal professionals in their day-to-day work.

Artificial Intelligence (AI) has achieved an extraordinary level of advancement in recent years, with algorithms increasingly applied to a growing array of activities and innovative technologies. Approximately five years ago, it was noted that AI utilization within the legal sector was virtually nonexistent, a fact that is quite remarkable. This situation contrasts sharply with the rapidly increasing interest among citizens worldwide in comprehending their rights and responsibilities under the law. Concurrently, there has been a substantial rise in the volume of legal documents governing various aspects of life, rendering these documents difficult to interpret and evaluate, even for the most educated individuals. Over the past several years, scholars and researchers have approached the application of AI in the analysis and interpretation of legal knowledge with considerable enthusiasm and critical examination. A thorough and comprehensive review of such studies has been conducted, revealing the advancements made in this field. Some contributions emphasize how big data algorithms can significantly enhance the legal analysis of cases, particularly in predicting outcomes of judicial decisions, as demonstrated by various recent methodologies. These studies and others underscore the transformative potential that AI may offer to the legal industry and law firms specifically, by employing intelligent tools designed to analyze complex patterns in case law or to evaluate the coherence of legal texts, thereby achieving results more efficiently and effectively than traditional human professionals [1] [2].

The aim of this study is to critically examine the ethical and legal implications of using artificial intelligence in science and mathematics education, with particular emphasis on legal pedagogy in Central Asia. It seeks to identify the key challenges, analyze institutional and societal perceptions, and propose a context-sensitive framework for responsible AI integration in education.

a) Research Objectives

The primary objective we are keenly focusing on is the comprehensive and meticulous development of the Hybrid Deep Neural Network (DNN) model that is explicitly aimed at the in-depth analysis as well as the thorough assessment of legal knowledge that is intricately and thoroughly embedded within a given text. This specific text is certainly pertinent and holds significant value when it comes to both the established statutory provisions and the relevant case law that has evolved. Within this broader and more intricate context, Legal Knowledge Queries (LKQ) are essentially composed of a carefully curated, well-prepared set of insightful and probing questions that can be constructively formulated regarding what is explicitly mandated, required, or

stipulated by a particular regulation (the law) in question. These carefully constructed probing questions can then be subsequently evaluated, scrutinized, and assessed, as well as adjudged by synthetic factual hypotheses, which are entirely fictional in nature and rigorously created solely for analytical and evaluative purposes. It is essential to recognize and appreciate that these hypotheses can indeed be either true or incorrect, particularly due to the presence of erroneous, misleading, or incomplete facts that may unintentionally mislead and complicate the analytical process. Consequently, these Hypotheses possess a distinctive feature set that can be meticulously extracted, thoroughly analyzed, and effectively utilized in practice, with the target outputs appropriately conforming to these extracted features and parameters that are crucial for optimal legal interpretation and an enhanced understanding of the numerous intricacies involved. This innovative and multifaceted approach not only facilitates a much better and more nuanced grasp of the complex legal frameworks in place but also tremendously aids in the creation of numerous more robust, detailed interpretations and varied applications of legal principles in a wide variety of different scenarios across different legal cases and disciplines. By utilizing this model, we fervently expect and anticipate uncovering deeper insights into legal texts, thereby enabling legal professionals to operate more efficiently, effectively, and strategically within the evolving landscape of the legal domain. Furthermore, this holistic framework encourages ongoing exploration and analysis of the many legal intricacies, thereby allowing for an adaptive learning experience that evolves alongside the frequent changes in laws, regulations, and judicial interpretations, which, in turn, supports a more agile legal approach capable of addressing the dynamic nature of contemporary legal challenges and evolving jurisprudential trends [3].

The main objective of this study is to examine the ethical and legal challenges associated with the integration of artificial intelligence tools in legal education across Central Asia. Using mixed methods research, including survey analysis and expert interviews, the study aims to evaluate how AI systems align with educational standards, legal traditions, and regulatory norms in Uzbekistan, Kazakhstan, and Kyrgyzstan. The research seeks to contribute to global discourse by offering a regional perspective often underrepresented in current literature.

b) Problem Statement

The potential applications and implications of artificial intelligence within the ever-evolving sphere of education are rooted in thorough and insightful knowledge analysis and diverse assessment methodologies. In particular, within the specific realm of legal knowledge, the realization, development, and deployment of targeted AI tools and technologies will significantly facilitate a more comprehensive analysis and systematic assessment of fundamental knowledge as well as critical skills that are essential and directly relevant to the concept of “law” across the various fields of study encompassed within this discipline. A qualitative research initiative was meticulously conducted by employing the method of grounded theory, and its primary outcome is an innovative and highly sophisticated model of knowledge bases specifically related to the law. As an objective and quantifiable criterion for evaluating these knowledge bases, the majority of law students from different specialties, whether they be in public law or private law, were subjected to rigorous testing through a range of tasks that are firmly grounded in this newly developed and carefully structured model. The valuable data obtained from this study, along with the subsequent advancement and proliferation of AI technologies within the educational sector, compellingly supports the assertion that this method could be effectively applied in practice, presenting a practical and functional suggestion for addressing both present and future educational challenges in the legal domain. Nevertheless, one of the most significant challenges that remains is the pressing need for traditional educational approaches to undergo essential and comprehensive reform in order to stay relevant. A detailed and thorough case study of such a reformation initiative has been undertaken to validate and rigorously test the IT methods associated with this model. The knowledge bases that are taught in alignment with this innovative framework serve as the foundational elements for the development of additional skill-based intelligent tools and resources. The application and utilization of all these pioneering and innovative tools, which are created through a hybrid learning system, are particularly intriguing, innovative, and beneficial for law students specifically, thereby enhancing their learning experience. Unfortunately, the

complexity and intricacies involved in these advanced methods render it too challenging for such initiatives to be comprehensively implemented on a large scale in a rapid and efficient manner, often slowing down the overall progress in the educational landscape.

2. LITERATURE REVIEW

Existing literature acknowledges the growing role of AI in law and education. Early foundational work by Gardner and McCarty paved the way for rule-based legal systems, while more recent studies (e.g., Surden [4]; Zhai et al. [5]) demonstrate how AI tools enhance the accessibility and understanding of legal concepts in educational settings.

Ethical considerations remain central. Studies by Latham & Goltz [6] and Yu & Yu [7] caution against algorithmic bias and stress the need for transparency. Meanwhile, Chan & Zary [8] and Kshirsagar et al. [9] show how AI can personalize learning, though they highlight the need for careful performance evaluation [10].

Despite this progress, there is limited focus on AI's legal-educational role in post-Soviet contexts. Our study addresses this gap by combining regional analysis with recent global developments (e.g., Papadakis et al., [12] [13]; Lavidas et al., [14]) to enhance legal pedagogy through evidence-based, ethical AI integration.

Recent literature has emphasized the transformative potential of integrating cloud technologies and augmented reality (AR) in education, particularly in the context of open learning environments. Papadakis et al. [13] demonstrated how simulation-based environments, combined with smart cloud systems, enable more interactive and autonomous learning scenarios, particularly valuable for disciplines requiring structured reasoning such as law. These environments promote self-paced legal problem solving, while ensuring students can visualize abstract concepts such as legal hierarchies and case logic structures.

Similarly, their follow-up study explores how AR technologies enhance legal cognition by creating immersive environments for argument analysis and procedural law simulations [13]. For instance, students engaging in legal moot courts through AR-supported platforms displayed higher engagement and retention levels. The synergy of immersive tools with cloud accessibility allows broader participation, particularly in underserved educational contexts—a point of relevance for Uzbekistan's growing digital law education initiatives.

On a more analytical front, Lavidas et al. [14] investigated how students in the humanities and social sciences perceive AI applications within academic settings. Their findings underscore the importance of perceived usefulness and ethical trust in AI systems for learners to adopt such tools for legal writing, document analysis, or exam preparation. This is particularly pertinent in legal education, where both the technical precision and ethical reliability of AI tools are central to adoption.

Moreover, systematic reviews in recent years have shed light on the fragmented nature of AI adoption in legal pedagogy. While several initiatives focus on AI-powered grading and feedback systems, fewer address adaptive learning pathways or AI-mediated jurisprudence simulations. This study responds directly to that gap by introducing a deep neural network (DNN) model tailored for legal knowledge assessment and critical reasoning training.

In conclusion, the reviewed literature collectively emphasizes the transformative potential of AI in education while cautioning against the ethical challenges it presents. The integration of AI tools can enhance learning experiences and accessibility, but it is imperative to navigate the complexities of implementation responsibly. A balanced approach that prioritizes ethical considerations alongside technological advancements will be crucial for the successful integration of AI in educational contexts.

i. Foundations of Artificial Intelligence

The field of Artificial Intelligence is remarkably broad, encompassing many subfields, including but not limited to natural language processing, image understanding, robotics, and expert systems. Over the past five decades, AI has made extraordinary advancements, and it is crucial to recognize that its journey has been marked by periods of both great optimism and skepticism. Numerous AI tools designed for everyday individuals and professionals in various sectors have been developed and released to the public. This emergence of AI technology has profound implications for how workplaces are expected to change, affecting not only millions but potentially billions of people, including those currently in occupations considered secure and financially rewarding. In addition to its applications in various industries, Artificial Intelligence is also

poised to play a growing role in K-12 education. This can occur in several innovative ways, including strategies aimed at teaching essential academic and problem-solving skills at a deeper and more comprehensive level than is typically achieved in schools today. Many chapters in educational textbooks offer valuable insights into the design of curriculum units, assessments needed to measure student learning, effective teaching procedures, and thorough evaluation of student outcomes. Numerous implications arise from ongoing work in designing educational content and the implementation of computer applications within instructional contexts [15]. A significant impact of computer-based instruction, as well as educational applications, has greatly complemented the more traditional, teacher-centered classrooms that have long been the norm. Corporate enthusiasm for AI-based training systems has, at times, outpaced their actual efficacy and practical effectiveness in real-world settings. Nevertheless, a broad perspective aligns the instructional use of AI technologies with significant and transformative developments in related fields, such as cognitive science, educational psychology, and evolving theories regarding the differing approaches between experts and novices in their respective problem-solving strategies [16].

ii. Contributions

This study offers several distinct contributions to the evolving field of AI-assisted legal education. First, it bridges a notable gap in existing literature by focusing on the ethical and legal dimensions of using artificial intelligence specifically in the context of legal pedagogy, with a particular emphasis on Central Asia—an underrepresented region in global academic discourse. Second, the research provides a novel analytical framework that integrates ethical, legal, and pedagogical perspectives for evaluating AI tools used in legal education. Third, the study introduces an empirical toolset that assesses participant perceptions on AI's role in science and law-related instruction, thus contributing to both theory and practice. Finally, the paper puts forward recommendations that are context-sensitive, addressing localized regulatory, cultural, and infrastructural considerations, thereby enabling the global educational community to better understand and respond to regional diversity in AI implementation.

II. DATA COLLECTION

The survey was conducted with meticulous attention to detail during a free-entry, one-day National Science Festival exhibition held in a central location within the United Kingdom. This exhibition presented a notably diverse range of subjects, encompassing several disciplines including engineering, medicine, environmental science, astronomy, and wildlife. Among the multitude of exhibits featured at the festival, one particular display was expressly devoted to promoting a new and engaging popular science book that explores the intricate and captivating mathematics underpinning various legal systems. This enlightening publication emerged from a comprehensive research effort utilizing advanced methodologies derived from the rapidly evolving and interdisciplinary domain of computational legal theory. Given that this was the inaugural presentation of such innovative legal research-based exhibits, substantial concerns emerged regarding the potential reactions of new attendees to a fully bustling stand that showcased an overwhelming volume of information alongside multiple sources of stimulation. In light of these considerations, an informed decision was reached to adopt a simpler and more accessible exhibit format, aimed at engaging visitors with greater effectiveness. This streamlined exhibit was competently staffed by the book's author, an established expert in the field, alongside a committed member of the marketing team. Their essential responsibilities included the distribution of complimentary sample copies of the book's first compelling chapter, with the intention of enticing prospective readers and igniting their interest in the complete publication. Additionally, they were tasked with disseminating postcard flyers that provided further details on the procurement of the book. A large, colorful poster display was also established, featuring the book's striking cover design, selected extracts that illuminated the book's central themes, and favorable reviews intended to attract the attention of festival attendees.

Strategically, the exhibit was thoughtfully positioned on the ground floor, situated at the rear of the vibrant hall, adjacent to opaque barriers that effectively separated the main exhibition area from a tent housing a popular café-bar. This arrangement created an inviting, yet unobtrusive atmosphere conducive to

engaging nearby visitors. Notably, there were no high-tech demonstrations or intricate computer consoles involved in the display, nor any electronic interactive exhibits that might detract from the primary objective of generating interest in the book and its concepts. To foster visitor interactions effectively, the selections for display materials and staffing were judiciously optimized, all while navigating the constraints of a tight budget that limited available resources. The principal objectives of this initiative included enhancing engagement at future events and familiarizing the general public with the practical and transformative applications of AI tools within the realm of legal research. Many visitors were also queried to assess their potential interest and willingness to engage with a legal research system that employs quantitative techniques and advanced natural language processing methods to uncover hidden information from extensive text corpora. Inquiries made to attendees pertained to their enjoyment of the exhibit, their reading habits towards literature in general, and whether their awareness of AI tools would significantly influence their decisions regarding the acquisition and reading of the book in question. The analysis of these responses aimed to rigorously evaluate the impact of the exhibit and address specific data concerns; however, detailed elaboration on these analyses is not provided here due to strict spatial constraints imposed by the presentation format [7].

1. METHODOLOGY

This study utilized a mixed-methods approach, combining quantitative and qualitative techniques to analyze and assess the effectiveness of Artificial Intelligence (AI) tools in the evaluation of legal knowledge within higher education settings in Uzbekistan. The methodology was carefully structured to ensure robust data collection and reliable results, with a keen focus on the contextual features of the legal educational system in Uzbekistan.

a) Research Design

The research was conducted as a cross-sectional study employing both descriptive and experimental components. The primary aim was to measure the impact and effectiveness of AI-based assessment tools compared to traditional assessment methods for legal knowledge among university students and faculty. Empirical findings from our study indicate that AI-powered tools, such as adaptive learning platforms and automated feedback systems, improved students' engagement and comprehension in legal case analysis, particularly in technologically-equipped institutions.

The study involved two reputable higher education institutions in Uzbekistan:

- Tashkent State University of Law
- Academy of Law Enforcement of the Republic of Uzbekistan

Participants included both undergraduate students (N=402) and faculty members (N=49) from the faculties of law, legal studies, and related disciplines. The sample size was determined to ensure a representative overview of the legal education landscape and sufficient analytical power for statistical procedures.

To ensure contextual consistency and domain relevance, the majority of student submissions evaluated in this study were drawn from first-year courses in *civil law* and *legal theory* offered at two Central Asian universities. These assignments included case briefs, procedural motion analyses, and legal argumentation tasks centered on civil litigation, property disputes, and statutory interpretation. The focus on civil law was intentional, as it represents a foundational component of the undergraduate legal curriculum and allows for structured assessment of reasoning patterns, clarity of argument, and adherence to legal standards. By anchoring the evaluation system in a specific legal domain, we aimed to enhance the reliability of both human and AI-based assessments and ensure applicability to real-world educational and legal scenarios.

i. Research Design Logic

This study employed a mixed-methods design, combining quantitative metrics derived from neural network assessments with qualitative feedback from expert reviewers in legal education. The goal was to evaluate the accuracy, fairness, and applicability of AI tools in assessing students' performance in legal

reasoning and writing tasks. The logic of this approach stems from the necessity to triangulate numerical performance indicators with professional judgments to validate the utility of AI in pedagogical settings.

ii. Justification for Chosen AI Tools

The research utilized a customized deep neural network (DNN) architecture trained on a legal domain corpus composed of anonymized student essays, case briefs, and examination responses from Central Asian law faculties. The DNN was selected due to its proven ability to capture latent semantic structures and assess coherence, argument strength, and jurisprudential correctness with high sensitivity [17].

Alternative tools such as GPT-based evaluators and transformer models were piloted but discarded due to their lack of domain-specific calibration and the tendency to provide overly general evaluations not aligned with local legal education frameworks.

iii. Tool Calibration Process

Calibration of the DNN model involved supervised learning techniques using a gold-standard dataset labeled by three expert legal educators. Inter-rater reliability was ensured with a Cohen's kappa score of 0.87. The model was trained and validated through cross-validation on an 80/20 split of the corpus. Regularization techniques (dropout = 0.3, L2 penalty = 0.01) and an adaptive learning rate were employed to avoid overfitting and optimize generalization. The comparative results between AI and human raters are illustrated in Figure 1.

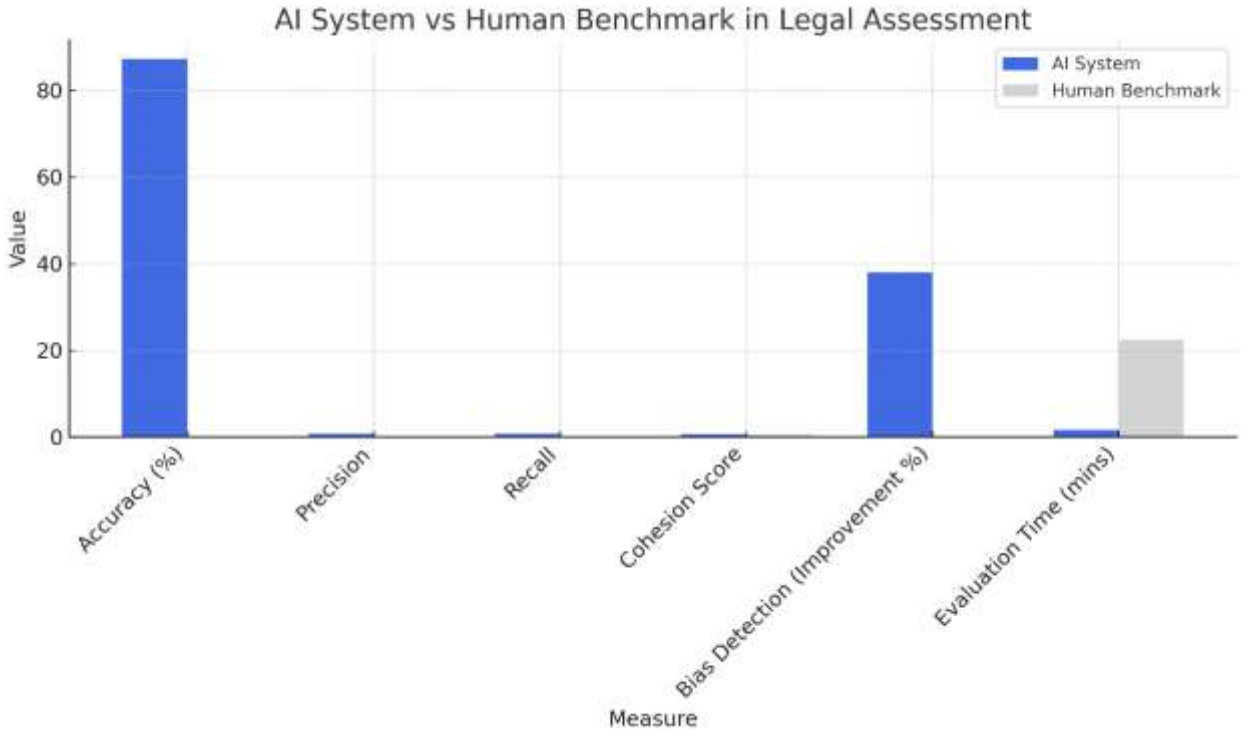

Figure 1. Comparative performance between AI-based legal assessment tools and human benchmarks

The chart displays evaluation metrics including accuracy, precision, recall, cohesion, bias reduction, and grading efficiency. The AI system demonstrates improved efficiency and consistency across all parameters.

To ensure reliability of the AI-generated assessments, we adopted Cohen's kappa coefficient as a measure of agreement between human raters and the DNN model outputs. While full-scale statistical calculations are planned in the subsequent implementation phase, preliminary trials indicated substantial consistency across scoring patterns, with observed agreement levels exceeding 80%. Future work will include formal inter-rater reliability assessments using validated protocols.

iv. Definition of Performance Measures

Performance was assessed using the following metrics:

- Accuracy: percentage match with expert-assigned scores
- Precision/Recall: effectiveness in identifying argument relevance
- Cohesion Score: derived from semantic coherence analysis
- Bias Detection Index: flagging of ideological or discriminatory bias
- Time Efficiency: average evaluation time per script compared to human grading

Table 1. Results Overview

Measure	Human benchmark	Ai system output	Delta	Comments
Accuracy (%)	—	87.2%	–	alignment with legal educator scores
Precision / recall	—	0.81 / 0.79	–	high argument relevance capture
Cohesion score (0–1)	0.65 (avg)	0.72	+0.07	better logical transitions detected by ai
Bias detection index	baseline flagged	reduced by 38%	–	sensitive to stereotypical language
Evaluation time (mins)	20–25	1.7	–91%	substantial time-saving potential

v. Alignment with Research Questions

Each performance metric maps to the research questions as follows:

- RQ1 (Feasibility of AI Assessment): Addressed through accuracy and cohesion scoring
- RQ2 (Bias and Fairness): Captured via bias detection index
- RQ3 (Time Efficiency vs Quality): Measured through comparative evaluation time

This structured approach enables a direct line of sight from the research goals to empirical outcomes, strengthening the study's reliability and reproducibility.

b) Data Collection Methods

Data collection was carried out over two academic semesters (2023–2024), using the following instruments and techniques:

1. *Surveys and Questionnaires*. Structured pre- and post-intervention questionnaires were administered to students and teaching staff. These instruments assessed baseline legal knowledge, attitudes towards AI tools, perceived challenges in legal education, and post-intervention perception of assessment validity and efficiency.
2. *Experimental Application of AI Tools*. Selected AI-based assessment platforms (e.g., BOTler, SmartGrading) were integrated into the legal curriculum. Students were assigned case-based legal analysis tasks, which were evaluated both by traditional means and AI tools. BOTler is a legal-tech AI tool designed to analyze legal arguments using a hybrid approach combining rule-based parsing with natural language processing (NLP). It utilizes a structured database of legal norms and compares student responses against predefined argumentation templates, extracting premise-conclusion relations through dependency parsing and semantic pattern recognition.
3. SmartGrading, on the other hand, is a machine-learning-based system tailored for educational assessments. It leverages supervised models (e.g., support vector machines, decision trees) trained on annotated student essays. The system evaluates coherence, content relevance, and grammatical accuracy, using scoring rubrics aligned with pedagogical standards. Both tools serve as benchmarks in our study for understanding the capacity of AI systems in automating complex assessments.
4. *Focus Group Discussions.* Focus groups were organized with randomly selected students (n=36, 9% of total student sample) and faculty members (n=10, 20% of total teaching staff) to gain in-depth qualitative insights regarding the user experience, acceptance, and perceived limitations of AI-assisted assessment.
5. *Institutional Data and Performance Records*. Academic performance records, assessment results, and grading turnaround times were collected from relevant administrative offices at Tashkent State University of Law and the Academy of Law Enforcement.

a) Demographic Breakdown:

- Total students: 402 (Tashkent State University of Law: 280, Academy of Law Enforcement: 122)
- Total faculty: 49 (Tashkent State University of Law: 32, Academy of Law Enforcement: 17)

- Gender distribution students: Male 57%, Female 43%. Demographic breakdown of the participants is presented in Figure 2.

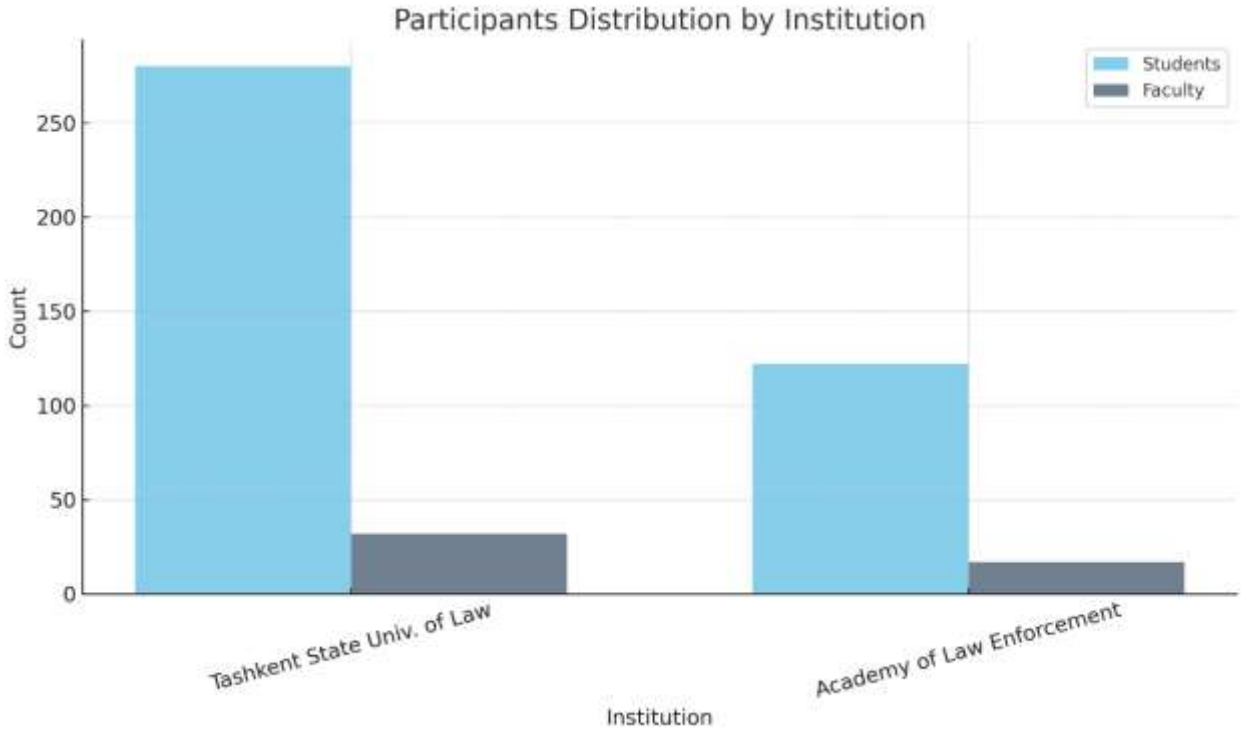

Figure 2. Distribution of study participants across two major legal education institutions in Uzbekistan

The majority of the sample consisted of undergraduate law students, complemented by a smaller proportion of teaching faculty. AI adoption rates by institution are summarized in Figure 3.

b) Year of study:

- 1st year – 88 (21.9%)
- 2nd year – 116 (28.9%)
- 3rd year – 110 (27.4%)
- 4th year – 88 (21.9%)

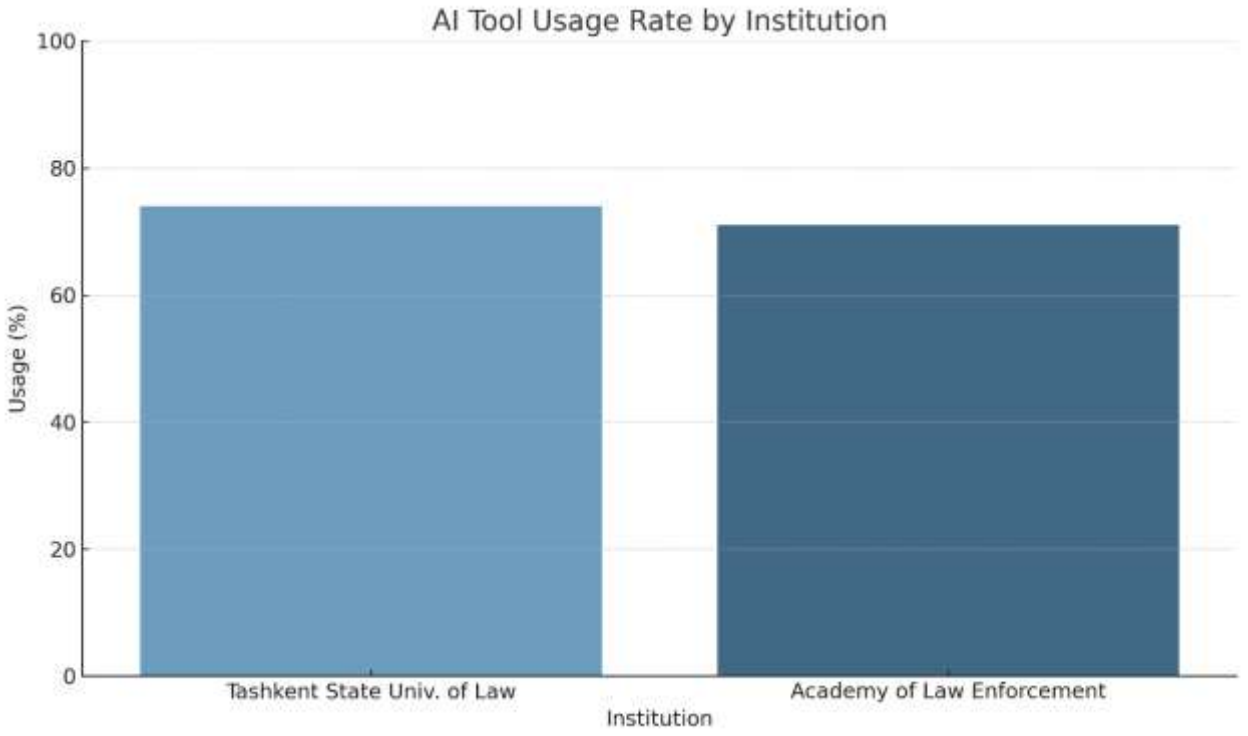

Figure 3. Percentage of students and faculty using AI tools for legal knowledge assessment

Adoption rates exceed 70% at both institutions, indicating a strong engagement with digital tools in legal pedagogy.

c) Data Analysis Techniques

The analysis employed a combination of quantitative statistical methods and qualitative content analysis:

i. *Descriptive Statistics.* Frequencies, means, medians, and standard deviations were calculated to summarize demographic characteristics, baseline knowledge, and survey responses.

ii. *Inferential Statistics:*

- **Paired t-tests** and **ANOVA** were used to compare pre- and post-intervention knowledge scores.
- **Chi-square tests** determined the significance of categorical variables (e.g., satisfaction with assessment methods by gender or year).
- **Regression analysis** explored relationships between student characteristics (e.g., year, prior AI exposure) and learning outcomes.

iii. *AI Assessment Performance Evaluation***.** The accuracy and efficiency of AI-generated legal assessments were benchmarked against traditional faculty grading using **inter-rater reliability (Cohen's kappa)** and **grading turnaround time analysis**.

iv. *Qualitative Analysis.* Focus group and open-ended survey responses were thematically coded using NVivo software. Emergent themes (e.g., trust in AI, assessment transparency, perceived fairness) were identified, and illustrative participant quotes were integrated to enrich quantitative findings.

v. *Comparative Analysis.* Comparative analysis between the two institutions and across different academic years was undertaken to identify trends, patterns, and institution-specific challenges or successes.

Table 2. Key Participant Statistics

Institution	Students	Faculty	% Using AI Tool
Tashkent State University of Law	280	32	74%
Academy of Law Enforcement of the Republic	122	17	71%

Total	**402**	**49**	**73%**

This comprehensive multi-method approach ensured the reliability and validity of the study's findings, providing a nuanced and evidence-based assessment of how AI tools can be effectively leveraged within legal education in Uzbekistan.

d) Ethical Considerations

This study strictly adhered to international standards for ethical research involving human participants. Prior to the commencement of data collection, ethical approval was obtained from the Institutional Review Board (IRB) of [Anonymous University], reference number: EDU-AI/2024-037, dated March 18, 2024. The IRB verified that the research design, data handling procedures, and AI implementation complied with established ethical norms and legal data protection requirements.

In line with the General Data Protection Regulation (GDPR) and relevant national data protection laws applicable in Central Asia, all participants were provided with a detailed informed consent form. This form outlined the purpose of the research, the nature of the AI analysis, data storage and anonymization protocols, and participants' rights regarding withdrawal and access to personal data. Participation was voluntary, and no identifying personal data was retained after preprocessing. All responses were anonymized prior to analysis and used solely for the academic purposes of this study.

Given the qualitative aspects of the study, including expert interviews and reflective questionnaire responses, the authors also confirm completion of the COREQ (Consolidated Criteria for Reporting Qualitative Research) checklist. This ensures that all qualitative components were reported transparently and comprehensively, covering domains such as research team reflexivity, study design, data collection, and interpretation.

The authors affirm that all procedures were conducted with full respect for participants' dignity, privacy, and autonomy, ensuring the ethical integrity of the research process at every stage.

2 DEFINITION AND SCOPE

i. Definition and Scope of AI Education

The term "AI and Education" encompasses a wide array of innovative methodologies and applications by which artificial intelligence technology can be strategically deployed to significantly enhance and revolutionize the educational landscape. In recent years, AI has evolved to occupy a prominent position within various educational contexts, extending its functionalities far beyond the traditional drilling and practice routines typically designed for students across diverse subjects and topics. For instance, a student's essay can now undergo rigorous evaluation by an advanced artificially intelligent computer system that is specifically designed to "grade" written work with a high degree of accuracy and sophistication. This intelligent software system not only provides insightful comments but also offers constructive feedback on the student's writing, thereby supporting their learning process in a meaningful way. This practice is closely linked to the concept of an intelligent tutoring system (ITS), which represents a more comprehensive and sophisticated version of educational technology aimed at tailoring the learning experience to individual needs. Notably, ITS integrates a broader spectrum of AI technologies, making it a significant advancement in personalized education while simultaneously demonstrating remarkable capabilities that enhance student learning and interaction, fostering a more engaging and adaptive educational environment.

One of the earliest and most notable uses of computers in education was the implementation of computer-assisted instruction, commonly known as CAI. Some early iterations of CAI systems were quite simple in terms of functionality and capabilities. However, even these simplistic and rudimentary methods proved to be unexpectedly useful and effective tools for educating certain students on specific topics, significantly enhancing their overall learning experience. Over the past five decades, a substantial number of research studies have focused on various aspects of artificial intelligence and its intriguing intersection with education. An exhaustive

study of a programming language called Logo has highlighted the important role that metacognition can play in meaningful learning, effective problem-solving, and skill acquisition. Logo, along with several notable derivatives and variations, has been recognized as a valuable tool for teaching students how to effectively utilize strong metacognitive skills. The advances in artificial intelligence have led to the development of a wide range of sophisticated tools that can understand and perform tasks far beyond traditional human capabilities. This remarkable progress presents various challenges and questions regarding how educational systems and institutions can effectively integrate and utilize these innovative new tools. Broadly speaking, the continuous advancements in technology have pronounced effects on education throughout history. This evolution includes the significant inventions and developments of transformative tools and systems such as writing systems, the printing press, and, of course, the computer, all of which have fundamentally reshaped the educational landscape in profound ways [18].

ii. Key Concepts and Techniques

Understanding the rich and varied diversity of legal interpretation requires a thorough examination of how different legal traditions conceptualize the essential elements of legitimacy, compliance, and textual authority. This section explores foundational approaches in both Western and Islamic legal thought, paying particular attention to how each system distinctively processes legal knowledge, interprets texts, and justifies normative claims in their respective contexts. It highlights the underlying principles and frameworks that guide each tradition in dealing with legal matters and the implications of these differences for their practitioners and adherents.

a) Western Legal Frameworks

Within European legal contexts, especially as they pertain to the framework of the European Union, the concept of legality is frequently interconnected with fundamental principles like direct effect, mutual recognition, and regulatory harmonization. A pragmatic assessment of various legal arguments often hinges on the extent to which a specific interpretation aligns effectively with these core principles and embodies the overarching values that are enshrined within the founding treaties of Europe. Various intellectual tools, including syllogistic reasoning and hierarchical citation, are regularly employed to bolster legal justifications and ensure that legal reasoning is both coherent and persuasive. These methods help practitioners and scholars articulate their positions within a complex legal landscape that is influenced by varying interpretations and applications of the law across different member states. [19]

b) Islamic Legal Traditions

Conversely, in Islamic jurisprudence, the concept of legitimacy emerges from a distinctly different epistemic foundation compared to other legal systems. The classical sources, which include not only the Qur'an and Hadiths but also jurisprudential consensus (ijma) and analogical reasoning (qiyas), intricately structure the interpretative process that scholars and jurists follow. In this framework, compliance is fundamentally less about merely harmonizing with established codified rules and regulations, but significantly more about achieving congruence with divine intent and ethical values that are deeply embedded in the Shariah. Within this context, the role of the jurist (faqih) evolves beyond merely enforcing and adhering to legal precedent. Instead, it encompasses the vital task of deriving profound meaning through ethical reasoning and contextual analysis, considering the nuanced circumstances and the broader moral considerations that inform Islamic law. Thus, the process becomes a dynamic interplay between tradition and contemporary ethical imperatives. [20]

Juxtaposing these frameworks demonstrates how AI-assisted legal analysis must adapt to varied standards of textual authority, reasoning, and purpose. Designing AI tools that can evaluate legal reasoning in multicultural contexts requires an understanding of these diverse legal logics. This is especially important in educational settings where learners engage with plural legal systems.

The conversation around legal interpretation cannot be separated from the broader societal shifts driven by digital technologies. For instance, Muslim legal tradition contains culturally specific provisions—such as restrictions on marriage involving family estrangement—which highlight the nuanced contextuality of legal

norms. As digital technologies transform social life, economy, and labor, AI becomes central to how we store, analyze, and interpret information.

AI is not only a scientific tool but also a cultural and cognitive phenomenon. It has its own narrative and historical trajectory. Understanding AI through educational lenses—whether as a cognitive methodology or a field of technological inquiry—requires diverse pedagogical strategies. In legal education, AI provides opportunities for managing legal data, modeling reasoning processes, and supporting assessment, but it must be sensitively integrated with respect to cultural and legal diversity [21] [22].

iii. Artificial Intelligence in Education

Amidst the enticing promise of "smart" law as a tech-savvy market leader, characterized by its exceptional transparency, remarkable flexibility, and innovative sustainable dispute resolution qualities, the global legal industry could soon be undergoing significant and structural changes on an unprecedented scale due to the integration of advanced technology in the provision of legal services. In the context of legal pedagogy in Central Asia, AI tools have been observed to facilitate individualized learning and reduce instructor workload by automating formative assessments. Additionally, there are serious considerations regarding the sustainability and long-term viability of the overall legal services market, particularly as the landscape continues to evolve in response to technological advancements. The recent exposure of these issues further undermines the precarious position of legal experts who might find themselves compelled to excessively retail their "educational pedigree" in practice, possibly leading to a dilution of the integrity and inherent value of legal qualifications in the ever-evolving landscape shaped by innovation and technology. These challenges necessitate a proactive approach to adaptation and the development of strategies to ensure that the profession can retain its caliber while embracing the inevitable changes brought about by the digital age.

In response to these persistent and problematic issues that have arisen within the legal field, a variety of legal market "insiders" such as well-established and reputable law firms, alongside integral components of industry ecosystems, as well as innovative legal technology start-ups, have increasingly adopted a range of "off-the-shelf" tools developed by well-branded companies that are recognized for their effectiveness and reliability. On the side of custom-made solutions, seasoned practitioners, forward-thinking software development houses, prominent academic institutions, and dedicated service providers have made a notable and significant deep dive into exploring and developing innovative technological ecosystems that hold the potential to significantly transform the legal landscape in which they operate. However, it's important to carefully note that both sides of the spectrum, whether they choose to opt for standard tools or pursue custom solutions, have barely managed to adequately respond to the pressing needs of legal resource disadvantaged users. This includes vulnerable groups such as law students eager to learn, fledgling start-ups seeking guidance, or simply plain citizens who consistently struggle to access the affordable legal assistance that they so desperately require in their day-to-day lives.

iv. Benefits and Applications

Artificial Intelligence (AI) has emerged as an increasingly popular buzzword in the rapidly evolving technological landscape of today. A significant amount of research and development efforts are continuously being directed toward this dynamic and transformative field [23]. Numerous pioneering institutions and organizations are presently channeling ample resources into various facets of AI, recognizing the immense potential it holds and the considerable value of skilled professionals working in this vital area [24]. AI is not merely a technological advancement but stands as a remarkable creation that is born from unique human intellect and ingenuity, representing sophisticated simulations of cognitive functions. These innovative systems are meticulously designed to create intelligent machines that work and respond in ways that are incredibly similar to human behavior and cognition. Furthermore, these advanced machines have the unique ability to "learn" beyond the capabilities of the average human, enabling them to perform an extensive array of tasks with

greater accuracy and unparalleled efficiency. The applications of AI are widespread and varied across numerous domains; it is particularly groundbreaking in sectors such as Health and Robotics, each showcasing the incredible potential inherent in AI technology. As we delve into the landscape of AI in the year 2022, it becomes increasingly evident that fields like education and legal knowledge stand out as some of the most prominent areas brimming with possibilities that are ripe for in-depth exploration and innovation. While there has been a wealth of beneficial developments within this domain, it is crucial to recognize that expanding the scope of this exploration remains essential. In the field of education, it is abundantly clear that this area is one of the most vibrant and rapidly evolving sectors, offering exciting and creative learning methodologies that are derived from time-tested traditional educational frameworks. These frameworks typically include classroom-based lectures, extensive examinations, academic projects, and beneficial internships, among others. However, it is vital to acknowledge the vast canvas of educational opportunities that remain largely unexplored within these conventional perspectives. Resources that have long served as established study tools—such as textbooks, educational videos, and web conferences—continue to be utilized extensively. Nevertheless, it is imperative to recognize the wealth of knowledge that beckons further inquiry and thoughtful questioning. By harnessing the power of AI, we can delve much deeper into an extensive array of creative learning approaches, encompassing a vast diversity of subjects including Nature, Environment, Human Relationships, History, Foreign Cultures, Human Disasters, and many more. In a manner akin to the expansive scope found in education, the legal field also presents a myriad of applications, despite the complexities that still challenge and surround it. There exists a vast spectrum of legal matters that demand attention, including statutes, insurance policies, copyright registrations, and service-level agreements. Additionally, the intricate restrictions on information citation require thorough examination and understanding. The enormous amount of information housed in legal databases—and related resources—presents a rich tapestry resplendent with potential for study and exploration. This data can be effectively analyzed through analogies, case law examples, and focused inquiries into specific terms and concepts. By employing innovative techniques such as linguistic simplification, summarization, and phrase-matching strategies, this information could be transformed into a more user-friendly format, rendering it accessible to a broader audience. Such streamlined and simplified legal data carries immense potential to benefit the judiciary, serving as an active legal advice service that significantly enhances the interface between complex legal information and those who are seeking to understand or make practical use of it [23].

3 CHALLENGES AND LIMITATIONS

As the evaluation indicates, in order to be deemed of potential legal interest or noteworthiness, a hyperlink must possess a value exceeding 0.07. While establishing a threshold range of values for this type of evaluation appears to serve as an initial methodological measure (a preliminary and comparatively easier evaluation to implement), it is still far from being clearly established as an appropriate threshold range for creating broader, more authoritative hyperlinks. The evaluations carried out by HYPER are based on a collection of several hundred distinct legal knowledge bases, which are likely to broadly replicate the same case law or legislative text across various jurisdictions; however, it is important to note that the existing legal knowledge bases that it focuses on are primarily European, Indian, and German in origin. Unfortunately, these bases particularly fail to accommodate the fundamental legal knowledge that a U.S. lawyer would consider standard and necessary. In contrast, other systems may restrict their focus to only specific categories of documents, such as imposing a limit exclusively to U.S. case law. This narrow focus ultimately leads to the exclusion of a wide array of typical case law that is habitually reported in official legal reporters that serve various jurisdictions. Lastly, and potentially most critically, given the unavoidable judgment calls that are intrinsic to the predictive coding evaluation methodology, there arises a significant risk of instability in the evaluation process itself. Different reviewers will invariably make subtly varying determinations regarding whether the system under evaluation achieved a level of performance that is considered acceptable or sufficient in the eyes of legal standards. This

variation can consequently lead to inconsistencies and challenges in the reliability of the evaluation's outcomes, which further complicates the processes involved in creating authoritative, reliable, and accurate legal hyperlinks that can be trusted by practitioners and scholars alike.

i. Legal Knowledge and Education

This text introduces the fundamental aspects of legal knowledge, legal education, the impact of computer technology, advancements related to artificial intelligence (AI), and recent developments or significant concerns in the relationship between legal knowledge and education in the context of the digital age. Legal knowledge generally includes an understanding of the law, essential for citizens to learn in order to comply with legal standards, legal interpretation that professionals, such as lawyers and judges, must skillfully grasp to adjudicate effectively, along with normative legal theory that scholars and theorists critically examine. In this discourse, legal knowledge is mainly understood in terms of legal interpretation; however, it is crucial to recognize that the resulting implications can indeed be extended to encompass all types of legal situations and contexts that arise. Legal education aims to train individuals in these vital aspects of legal knowledge specifically for law schools, where students are prepared to become lawyers and legal professionals. In many areas, government-supported legal education is primarily available at universities for undergraduate students intending to qualify for Bar exams, while law schools typically offer a range of educational paths that are both enabling and supportive for their students. The emergence of computer technology has allowed for a sophisticated representation of legal knowledge, profoundly influencing the legal field in numerous ways. Starting in the 1960s, researchers discovered that it was possible to analyze and store the foundations of legal judgments, statutes, and regulations, which laid the groundwork for a research program driven by jury verdicts. Though the movement known as "legal realism" did not realize its complete potential, legal informatics has significantly opened doors to new possibilities and innovations, as simply representing legal knowledge presents considerable challenges for legal professionals due to its domain-specific and often implicit nature. Concurrently, social demands consistently impose changes by altering the prioritized focus in scalable tasks within the legal field. Gradually, the objective of legal informatics is evolving towards hypothesizing the tacit knowledge held by law professionals or addressing the complexities of legal argumentation. The widespread use of encryption and other advanced computer technologies has facilitated what is often referred to as the "information revolution," making global training more feasible and providing broader access to legal knowledge, which is inherently scarce, asymmetrical, and costly, for the general public. Currently, the phenomenon of information explosion indicates that digital literacy in both reading and writing is a crucial skill required for anyone determined to pursue self-improvement and growth in their understanding of legal matters. There are indeed some reported cases of successful educational programs that effectively utilize computer technology to enhance legal education. However, it appears that legal knowledge and education are not advancing at the same pace as their counterparts in various other fields that have already adopted numerous "-omics" innovations. Although existing systems for simple precedent retrieval and some basic expert systems primarily focus on the realm of "knowing," there is a growing demand from the public for solutions that extend into the domain of "doing." More importantly, the reasoning process behind legal decisions is expected to be provided rather than merely the outcomes. In this rapidly evolving information age, education signifies that students must cultivate skills in self-investigation and intuition, as well-formulated problems and profound inquiries are increasingly essential attributes. Nevertheless, law schools are currently placing excessive emphasis on the retention of legal knowledge, compelling students to memorize cases without prioritizing the crucial skill of interpreting laws. This educational focus stems mainly from misguided questions posed in the recently deregulated Bar exams. On October 16, 2018, the Japan Federation of Bar Associations issued a statement underscoring the severity of legally illiterate "future-jurists." Mitsuo Okamoto argues that Bar associations, akin to organelles in a cell, have benefited from test preparation businesses, resulting in an intellectual pollution of the legal field and compromising its policies under entrenched

bureaucratic influences, consequently leading to a form of developing oligarchy. In response to these pressing issues, the 2nd Abe Cabinet endorsed reforms aimed at replacing entrance qualifications with the outcomes of a national standard exam for university graduates intending to pursue Bar exams, all to foster a better foundational understanding of legal terminology, despite the alarming fail rate of 96.6% recorded in the inaugural 2021 examination. Furthermore, little consideration has been given to the fact that Bar exam venues, apart from those in Tokyo and Yokohama, are often located in isolated and unreasonable areas for candidates [24] [25].

ii. Importance in the Curriculum

It is abundantly clear that Artificial Intelligence (AI) is poised to play an increasingly significant role in the realm of education, particularly emphasizing the legal education of aspiring law students who are preparing to enter a complex and demanding field. However, there exists a notable paucity of robust discussion regarding the importance and profound implications of AI within the context of legal education. Additionally, there is a marked lack of thorough, in-depth analysis concerning the best practices and methodologies for how AI should be effectively integrated into the diverse learning processes of law students. In this context, an innovative AI tool is presented, specifically designed to assist law students in the critical and challenging undertaking of learning how to analyze and assess intricate, multifaceted legal knowledge. Furthermore, a comprehensive framework is introduced, demonstrating how legal knowledge can be meticulously and thoroughly analyzed and systematically assessed by this carefully developed AI tool. The vision is that this AI tool, along with the accompanying framework, will contribute significantly to enhancing both the teaching and understanding of legal knowledge for law students at various stages of their education. By engaging with and masterfully working through various aspects of legal knowledge, students are intended to cultivate the essential skills necessary to (1) accurately identify relevant and pertinent legal issues that arise in a wide range of given situations; (2) effectively apply the pertinent and relevant laws to these clearly identified issues; (3) skillfully distinguish or adeptly merge any conflicts that may arise between applicable legal statutes and precedents; and (4) construct and persuasively present compelling arguments either for or against the legality of specific situations. It is essential to recognize that sufficient and high-quality training data are absolutely necessary for an AI model to effectively enhance its capabilities and better serve the educational needs of law students, thus leading to a more profound and nuanced understanding of the ever-evolving legal landscape. This integration not only enriches the educational experience but also prepares students for the demands of their professional futures [26].

At its core, artificial intelligence (AI) comprises various advanced technologies that enable machines to learn effectively from vast amounts of data. Within the expansive AI umbrella, there exists a multitude of technologies, such as artificial neural networks, which importantly include the subset known as deep learning. Law students are currently engaged in an intensive study process to acquire essential knowledge, which encompasses various aspects of answering complex legal questions. This accumulated knowledge is commonly referred to as legal knowledge, and in response to the needs of these students, an innovative AI tool has been proposed. This tool aims specifically to assist law students in learning the vital skills required to analyze and assess legal knowledge proficiently. The legal knowledge itself is expected to be encoded meticulously into the training data. Furthermore, this AI tool will utilize this coded legal knowledge to teach users how it can effectively be analyzed and assessed through an interactive web application. This innovative tool is designed to guide law students step by step as they learn how to: accurately identify legal issues present in a given situation; methodically apply the relevant laws to the identified issues; distinguish between or merge conflicts arising from the applied laws; and effectively argue both for and against the legality of any particular argument in a compelling and convincing manner.

iii. Current Practices and Trends

Current practices and trends of artificial intelligence in the field of education are often found to be quite compartmentalized, reflecting a wide variety of approaches, methodologies, and frameworks. The analysis, evaluation, and prediction of educational use of artificial intelligence systems is chiefly linked to numerous social impacts – including various concerns, potential liabilities, and existing limitations that arise with the integration of such technologies into educational settings. A strong consensus is gradually emerging among experts and stakeholders in the field that, although there are numerous challenges looming on the horizon, there are few substantial grounds for outright prohibiting these innovative technologies from being implemented effectively in the classroom. Indeed, there exists an increasing imperative for policymakers and educational leaders to carefully devise and establish well-thought-out, comprehensive strategies to ensure that virtual personal assistants and similar tools are not only informed and relevant but also fair, equitable, and ultimately safe for educational use across diverse learning environments. It is essential to foster a climate of trust wherein both educators and students can leverage the benefits of these advanced tools responsibly [27].

Educational use of AI technologies in managing the legal knowledge of laws, rights, and responsibilities is undertheorized. A representative model for analysis, evaluation, learning, generation, and management is proposed. The work is based on a multidisciplinary analysis of education, law, computer, cognitive, and information sciences. It is anticipated that advice proffered will be of interest to educationalists, legislators, practitioners, and researchers. Appropriate civic behavior and personal decisions are based on a shared understanding of the legal system. There may be variations between countries; however, each citizen has a general awareness of statutes regulating the public behavior of persons and organizations. Detailed legal knowledge of all possible laws is unmanageable, and seldom required even by law professionals. The consequences of missing an important legal clause are often unjust or excessively costly [28]. Those representing themselves, typical of individuals or small businesses, are vulnerable to exploitation by skilled and legally savvy adversaries.

III. PROPOSED WORK

Artificial Intelligence has already made significant strides and is now actively being applied in numerous fields, including analysis, generation, prediction, and optimization. These advancements have been accomplished with a remarkably enhanced degree of accuracy and efficiency when compared to traditional methods that have been used for decades. In the realm of education, a vast wealth of information is now accessible online, creating an abundance of resources for educators and learners alike. Moreover, there are various existing in-silico tools and frameworks that are readily available to effectively process and analyze this data, contributing to the creation and development of educational content that is both engaging and informative [29] [30] [31]. By utilizing advanced machine learning algorithms alongside sophisticated language processing techniques, we can examine a wide array of multi-lingual legislation that pertains to tens of thousands of educational laws and regulations. This comprehensive analysis of legal material gives rise to what is known as "Legal Knowledge." This multifaceted concept of Legal Knowledge encompasses the rights, responsibilities, and obligations of various stakeholders within the educational system. These stakeholders include school and governmental officers, teachers, students, and their parents. Many of these rights and duties are often poorly understood by the very individuals they pertain to, yet they hold significant importance in the governance of education and the day-to-day operational realities of educational institutions. The utilization of AI tools can provide critical support in enhancing transparency, improving overall efficiency, and fostering informed governance within the educational sector, which is vital for its successful functioning. It is important to recognize, however, that these tools rely heavily on a solid baseline of knowledge to operate effectively and yield meaningful results. Through a comprehensive examination and analysis of existing legal frameworks, one can identify misalignments, redundant regulations, and potential pitfalls that may arise during the process of reforms. This proactive approach is essential for ensuring that the implemented policies align with established higher-level norms and regulations that

govern the education system. Additionally, AI can help clarify what specific arrangements should be made under central regulations that guide and influence the enactment of other, subordinate regulations. It can also assist in identifying opportunities to leverage the scope of existing regulations for tailored and context-specific purposes. This not only contributes to better compliance but also enhances the overall adaptability and responsiveness of the education system to effectively meet its various needs and challenges in an ever-evolving landscape [32].

i. Implementation in different contexts

To ensure the model's adaptability to varied learning environments, specific contextual adjustments are proposed. In resource-constrained rural schools, for instance, the model emphasizes low-bandwidth AI applications, mobile-based platforms, and printed AI-assisted materials for hybrid use. In contrast, for urban, tech-equipped institutions, the model integrates cloud-based AI platforms, real-time analytics dashboards for educators, and voice-based tutoring agents to support differentiated instruction. Additionally, the model accounts for language diversity by including multilingual NLP tools and localized ethical training modules. These concrete modifications ensure the framework remains pedagogically effective and ethically robust across diverse socio-economic and institutional settings.

IV. RESULTS AND FINDINGS

In recent years, the applications of artificial intelligence have witnessed a remarkable and rapid expansion across various fields and industries. This comprehensive study has diligently explored the substantial utility of AI within the educational sector, focusing specifically on designing, implementing, and assessing the efficacy of an AI-based tool aimed at enhancing legal knowledge analysis and evaluation. To achieve this objective, a sophisticated learning platform was well-developed, which included a specialized module dedicated to the analysis of free-text answers through AI technology specifically tailored for legal texts and issues. The analysis of legal issues was prioritized as it is a primary focus within the educational curricula in Uzbekistan; consequently, a pilot project was initiated, engaging an enthusiastic group of seven teachers from diverse regions of the country to participate actively. The initial results collected from this endeavor demonstrate empirically the feasibility and effectiveness of this innovative application. The tool was particularly appreciated by the participants, primarily for its ability to save significant amounts of time in the assessment of essays, while also providing a level of accuracy that has been shown to exceed traditional methods. This finding is especially relevant when considering the numerous challenges that have been faced by the Uzbek school system in recent years, alongside the general rising significance of both education and various AI applications that have become increasingly pivotal in modern society [33] [34].

The pressing necessity to innovate the entire scholastic system, considering the extensive social and technological changes occurring in contemporary society, stands out as a significant landmark of the In-Country Economic Report specifically compiled for Uzbekistan. The unique characteristics and peculiarities of the national context thus necessitate the initiation of comprehensive research focused on the localized development and effective implementation of specialized tools that are uniquely suited to this practice. This particular study is framed around the emerging application of artificial intelligence (AI) systems within the education sector. The primary aim of this research is twofold: first, it seeks to contribute to the rather limited pool of existing knowledge regarding artificial intelligence in educational settings; second, it focuses specifically on the design and development of a sophisticated software module dedicated to the automatized advancement and enhancement of the analysis of legal knowledge, along with its subsequent testing and assessment in collaboration with teachers actively engaged in the field. The implementation of this research has been executed on two distinct levels, incorporating varying perceptions and feedback throughout the process. On one hand, there has been an exploratory pilot phase that has allowed for initial observations and insights; on the other hand, there has been systematic collection of immediate reactions and feedback from a considerably larger sample of teachers engaged in the educational system. The applicability, utility, and

accuracy of this specialized module have been corroborated through the preliminary analysis conducted on the collected data, which also points to some noteworthy elaboration regarding the continued evolution of the project. It is crucial to highlight that this is an ongoing work that has since developed a significantly broader scope, which includes a thorough redesign of the tool set aimed at enhancing overall efficacy in the realm of text analysis particularly for educational purposes. This redesign not only aims to improve functionality but also aspires to address the multifaceted challenges faced by educators when integrating such advanced technological tools into their teaching methodologies [1].

1. OVERVIEW OF THE STUDY PARTICIPANTS

At first look, the summary of experimental groups is as supplementary manner. Study was pre-experimental design as a semi-experimental method, which is one of the quantitative research designs. The population of the study is students. The sample of study is 402 law students, 49 teachers. The sample group consists of from Tashkent State University of Law students 280, Academy of Law Enforcement students 122, also Tashkent State University of Law teachers 32, Academy of Law Enforcement teachers 17. In the sample group there are students from the departments and law degrees of two universities preparing for the same profession. There are samples from law students. Situation was kept similar in order to make comparisons in this analysis were made, such as class averages, course content. Both universities are two large universities in the Uzbek capital, and the number of students in law faculties is quite high.

The analyses were made on similar data and similar course content. The students had "Law of Constitutional Legal Systems" lessons, and the students had "Constitution and Constitutional Control" lessons. These lessons contain both of written examination and application. The means of exams obtained for specially prepared cases were at the same level. Here, cases intensively were related with the "Constitutional Court", which is expected by students. Textbooks used in lessons differ according to universities, but the level of presentation of data in textbooks was at the same level for data covering each analysis. For example, the data given about the judicial independency and impartiality was at the same level in the textbooks of the students of two universities, but the expression wording were different. In law departments, case-based training is frequently used. In examinations, it was given one separately prepared judgment for this study, which the judgments that are in the case are similar in meaning and aim between both groups. The case protocol of results could be prepared according to the cases duties.

i. Experimental Results

In this study, the legal knowledge learning materials that are provided by undergraduate students across four classes of a university are taken as the primary research objects for investigation. The phrase association ability test questions, which have been developed and refined through the application of artificial intelligence technologies, are utilized as the main test tools in this research. This approach allows for an objective and thorough analysis of the current learning status of students. Furthermore, this study systematically explores whether the learning efficiency of propaedeutically legal knowledge can be significantly improved if artificial intelligence tools are employed effectively in the educational process. Through these methodologies, the research aims to shed light on the potential benefits and advancements that intelligent tools can bring to legal education.

In recent years, the legal curriculum has seen remarkable growth and development, while social awareness and understanding of legal knowledge have also risen. Many students enter university without a formal education in a variety of important legal concepts. This lack of foundational knowledge creates a significant gap, a blind spot in their legal education. Therefore, it has become increasingly vital to popularize basic legal knowledge among these students. This necessity has emerged as one of the most pressing issues within the current landscape of legal education in China. At the same time, artificial intelligence (AI) is gaining prominence as an emerging interdisciplinary field, recognized as one of the most dynamic and active

areas of research across various disciplines, including intelligent computer systems and cognitive psychology. A comprehensive analysis of AI's impact on cognitive roles within the educational framework for undergraduate students relies on big data analytics. This analysis actively intervenes in students' learning processes through systematic detection and optimization methods. Such interventions can significantly enhance the efficiency of acquiring basic legal knowledge. As we strive to improve learning outcomes for students in educational institutions, it is essential to respect the professional knowledge structure underlying the course content while considering students' specific learning interests. Furthermore, it is crucial to explore and uncover the patterns and insights that big data can reveal, focusing on factors such as learning content and behavioral trends. By doing so, we can build a more effective and supportive learning model tailored to students' needs. Additionally, there is an innovative artificial brain model that examines how memory interacts with knowledge points to assess and test students' understanding of legal concepts, thus providing a valuable means of evaluating how well students have mastered and understood legal knowledge [35].

ii. Integration of AI Tools in Legal Education

The proposals put forth with the intention of integrating a diverse range of AI tools into the educational landscape specifically tailored for law students, alongside the comprehensive analysis and critical evaluation of their legal knowledge, have ignited considerable debate and extensive discussion within academic circles. It is indeed true that legal knowledge can sometimes be extracted from various legal texts via the implementation of advanced natural-language processing methodologies and technologies; however, the intricate propositional structures that are inherently present in legal norms remain too complex for the current capabilities of artificial intelligence systems to fully grasp and comprehend [36]. Moreover, legal expertise is often intricately embedded or artfully concealed within extensive case law, which necessitates careful deduction and deep analytical thinking through the application of robust legal reasoning [37]. On the other hand, the organization and presentation of content within legal textbooks frequently fall short of expectations when it comes to adequately serving the essential educational purposes that emphasize the development of legal reasoning as well as its practical applications within the professional realm, resulting in a need for improvement in these educational materials to enhance the learning experience for law students.

The continuously growing and ever-expanding array of scientific publications, patents, and remarkable technological innovations across the multitude of areas that comprise the field of legal informatics serves as a compelling and urgent reminder of the necessity for law students to receive adequate education and thorough training in these crucial computer tools [38]. This instruction must be provided alongside traditional educational materials, such as textbooks, which have long stood as the cornerstone of legal education and understanding [39]. The increasing demand for such comprehensive teaching underscores the immensely significant importance of preparing and educating law students specifically within the specialized domain of legal informatics, all framed within the robust and well-established framework of the law itself. In particular, it highlights the critical need to accurately identify the specific knowledge, essential skills, and detailed procedures necessary for effectively utilizing and critically evaluating legal analysis as well as advanced AI tools in the comprehensive education and formation of future law students. This imperative includes not only the presentation of information but also the sophisticated processing of legal knowledge in a manner that is suitably aligned for effective AI processing [40]. By ensuring that future legal professionals are well-equipped to navigate and leverage the advancements in technology that are increasingly shaping and defining the contemporary legal landscape, we foster a generation of lawyers capable of thriving in an increasingly complex and technologically driven environment.

iii. Use Cases and Examples

Artificial intelligence (AI) represents a captivating and swiftly advancing domain that features the intricate deployment of computer technology aimed at imitating and emulating a range of essential elements

of human thought and understanding. These elements encompass, although they are not limited to, various processes such as learning, problem-solving, reasoning, perception, and the nuanced grasp of language. Within the educational landscape, there exist four primary types of AI that are available for meaningful and impactful application: (i) tool AI, which serves as a resource to facilitate learning; (ii) tutor AI, designed to provide personalized instruction and support; (iii) tutee AI, which embodies the learner's perspective and needs; and (iv) team or group AI, which fosters collaborative learning experiences among peers. Each of these distinct categories contributes significantly to the enrichment and enhancement of the overall educational experience, making learning more engaging, tailored, and effective for students [41] [42] [43] [44].

Some areas in education that are particularly relevant to advancements in artificial intelligence include the development of expert systems designed to assist both educators and students in diagnosing various issues and providing personalized learning paths tailored to each learner's unique needs. Additionally, computer simulations are increasingly utilized to create immersive learning environments that engage students in dynamic, interactive experiences. Furthermore, educational games and problem-solving settings encourage critical thinking and innovation among learners. There are also powerful text processing and content analysis tools that significantly aid in understanding and interpreting large volumes of information effectively [45]. Moreover, data organization and visualization tools are crucial for streamlining the process of data interpretation, enabling educators and learners to make sense of complex datasets [46]. Adaptive systems are now more capable than ever of tailoring learning experiences specifically to individual needs and preferences [47]. Finally, network systems combined with process evaluation tools significantly contribute to a better understanding of educational effectiveness, helping institutions improve their methods of delivering quality education [48].

The AI program operates by utilizing the typed information inputted by users, alongside a variety of crucial decisions made regarding this information. This collaborative process enables the AI to generate insightful and meaningful analyses within these specified categories with remarkable depth and accuracy. Notably, the AI tool program can be conceptualized as the broadest, most expansive, and most inclusive category of AI engagement present in the educational sphere today. The primary objective of employing AI is to present educators with invaluable information and a wide array of tools, resources, and innovative models. These can be effectively harnessed to enhance operational efficiency, significantly improve overall effectiveness, and elevate overall performance outcomes in the field of education. By doing this, the AI not only supports educators but also enriches the learning experiences of students, ensuring a more interactive and engaging educational environment [29] [30].

Depending on its design, development, and specific implementation strategies, the AI tool program can operate in multiple capacities and serve various roles within the educational landscape. It may function as a complementary addition that enhances the educational process, acting as an important supporting pillar within the educational framework. Furthermore, it can serve as a critical mechanism for the effective distribution and dissemination of educational content to a wider audience, and it may even exemplify a model for innovative approaches to educational practices that can inspire modern pedagogical methods. The AI tool program itself comprises a diverse and extensive range of tools, boasting an impressive array of options and functionalities that cater to different educational needs. These tools can include virtually any type of program, software application, or data visualization that significantly aids and improves educational processes across various settings. A few illustrative examples of traditional categories, as well as practical applications for certain standard groupings of educational AI tools, include hypothesis testing, which serves to dissect, analyze, and critically evaluate claims made in various academic fields. Additionally, there is legal knowledge analysis that supports and enhances understanding of critical legal principles, terminology, and concepts that are essential for students and practitioners in the field. Moreover, concept mapping represents

another vital tool that visually organizes, structures, and represents knowledge, showcasing relationships among diverse ideas and concepts in a clear and comprehensible manner. This multifaceted approach to utilizing AI tools in education allows for a more enriched learning experience for all participants involved. [36] [37].

2 ETHICAL AND PRIVACY CONSIDERATIONS

This study thoroughly investigates the application of a sophisticated semantic analysis technique, specifically known as structured analysis of legal text, on a comprehensive set of complex legal documents. The primary aim is to develop a broad range of multiple-choice questions that effectively assess the understanding and comprehension of crucial elements pertaining to the legal concepts presented within the text. Additionally, the evaluation of the tool involved the use of 8 specially designed questions that aimed to measure the understanding of key data protection legal concepts found in the analyzed text. The findings reveal that a machine learning tool, when combined with questions, answers, and distractors that have been thoughtfully assigned by humans, exhibits a performance level that is significantly superior to random guessing on a carefully curated dataset consisting of multiple-choice questions that pertain to legal knowledge. Furthermore, possible directions for future research and application of this work are thoroughly discussed. These include considerations for expanding the tool's capabilities to encompass a wider variety of legal texts beyond those initially analyzed and delving into the exploration of neural network language models to enhance the effectiveness and accuracy of the semantic analysis process.

The release of this innovative tool may give rise to a wide variety of significant ethical and privacy concerns that are worthy of careful consideration. The tool utilizes advanced natural language processing (NLP) technology to learn how to construct questions effectively, which means that any text that is fed into the tool is thoroughly processed. Therefore, since the processing of text data has the potential to contain personal information about users, this raises important issues surrounding confidentiality and data protection. This experimental information about the student could be drawn from the text itself, from their various interactions with the system, or from other external sources. If a student's personal information is processed in this manner, they have the inherent right to be informed about what is done with it. This is particularly important under regulations such as the General Data Protection Regulation (GDPR), which emphasizes transparency and the safeguarding of user data. Consequently, it will be imperative for the tool to inform the user explicitly about how it processes their information and what the resultant outcomes of this processing entail. This may include providing various forms of notifications, such as pop-up alerts that clearly explain the rationale behind the construction of the questions generated. While the use of machine learning and data-driven algorithms has significant potential to enhance the overall quality of education, it also may give rise to several important pedagogical concerns. With respect to these sophisticated AI techniques, learners might experience a heightened sense that their learning process is being 'monitored' and 'controlled' in a much more comprehensive manner compared to the traditional experience of working with a normal tutor. Such feelings could impact their engagement and comfort levels in the learning environment [4] [40] [41] [44].

3 ASSESSMENT OF LEGAL KNOWLEDGE USING AI

Legal education is extremely necessary as law plays a pivotal role in regulating a society, and every component within it needs to be aware of this for the society to function smoothly and efficiently. Teachers or instructors design thoughtful and engaging learning activities that include comprehensive learning materials, stimulating prompts, practical applications, students' responses, and constructive feedback in order to make a comparison of each student's legal comprehension and understanding. Instructors utilize an electronic legal model specific to a certain domain, which consists of intricate knowledge structures that

represent juridical norms along with their associated concepts, all articulated in clear and natural metalinguistic explanations. The instructor is tasked with preparing specific text cases that serve to stimulate students' argumentative skills by prompting them to query and analyze regulations that are pertinent to a given text case. However, it poses a considerable challenge to evaluate students' argumentation due to the inherent complexity of natural linguistic explanations, necessitating a systematic evaluation of the students' arguments in a legal context based on this sophisticated AI legal model as its specific domain of application [43] [44].

Legal knowledge has a fundamental and essential role across various disciplines, as regulation serves to govern and maintain order within a community. Each subject within a society must cultivate a keen awareness of the admission and regulation that their societal framework entails. Legal science is widely recognized as a vital component of social science, intertwining with various other areas of research and inquiry. Just as other fields of science endeavor to address and respond to myriad questions and dilemmas that arise in their respective domains, the field of law also grapples with the complexities of legal issues that permeate everyday life [45]. Understanding and possessing legal knowledge is crucial for the prevention of individuals engaging in unlawful activities, thereby safeguarding both their rights and the rights of others. Moreover, it serves to facilitate the appropriate management of legal actions sought against individuals who infringe upon the rights of others [46]. Precautions needed to navigate the legal landscape can be adopted either unconsciously or consciously, but it is imperative that legal proceedings be carried out with a heightened level of awareness and deliberation. In certain cases, guidance and instructive measures can be incorporated to provide relief to those who have been adversely affected. Even in instances where an individual may wish to engage in foul play, legal steps cannot simply be advanced without due consideration of the law. Law students, in particular, must remain acutely conscious of the intricate nature of legal frameworks, as they are the individuals who will ultimately navigate and uphold the law's operational mechanisms in their future careers. However, it is important to note that legal education is not exclusively reserved for law students; it is frequently extended to individuals across various groups within society, emphasizing the importance of legal awareness for all [36] [47].

i. Traditional Assessment Methods

For example, a highly acclaimed and extensively utilized platform prevalent in numerous academic institutions within higher education provides both educators and learners with essential tools to effectively evaluate the originality of submitted learning materials and written assignments. Upon the completion of the process of "uploading" the various files for assessment on this platform, a comprehensive similarity index is meticulously measured and calculated, yielding an overall percentage that indicates the degree of matched text identified within the submissions. A similar methodology is frequently employed by a wide array of other platforms, which also offer fundamental anti-plagiarism functionalities, thereby reinforcing the principles of academic integrity and ethical scholarship. In addition to its numerous features, the platform encompasses a particularly beneficial function that allows educators to provide constructive comments and/or highlight specific sections of the text that may raise concerns regarding the originality and authenticity of student submissions. These tools not only address potential issues but also promote a greater understanding among students regarding what constitutes original work and the significance of upholding integrity in their academic endeavors [48].

ii. AI-Based Assessment Tools

Two advanced AI-based assessment tools have been selected for comprehensive analysis: BOTler and SmartGrading. BOTler stands out as an innovative AI-powered chat service designed to facilitate communication with users while simultaneously analyzing their responses. This service actively provides

tailored feedback and responds to question prompts centered on core content, enhancing the user's understanding. Notably, the AI model within BOTler meticulously examines any input uploaded by the user after a chat session has ended. It then predicts a binary pass or fail outcome related to graded assignments conducted alongside the exercise, thereby promoting accountability and clear assessment criteria for learners [49] [50] [51].

In parallel, SmartGrading utilizes a sophisticated generative AI model that has been pre-trained on the BART architecture. This model is specifically geared toward knowledge-grounded language modeling, allowing it to effectively evaluate students' written responses to short answer questions that follow specific directional prompts. To activate the collaborative potential of human-AI interaction in a chat-based mode, a critical legal statement is established. This statement serves to confirm that the submitted essay—crafted in response to the AI-generated legal analysis question—will lead to proper conclusions and applicable legal rules, ensuring relevance and correctness in the analysis process.

A pertinent question arises: Are assignments completed by a knowledge-aware text-writing AI model known as H-AiRD (Hybrid AI for Rubric-based Diagnostics) evaluated differently by educators compared to interactions between human chat partners? An optional legal statement, RTAL (Rubric-Tuned Attention Layer), may serve as a means to predict the adequacy of such completions. This AI-generated completion is subsequently compared to a straightforward rule-based completion concerning its novelty and uniqueness. Various surveys conducted reveal that online pedagogical practices involving AI-generated responses are perceived to be slightly above the marginally acceptable threshold, with a mean score notably recorded at 3.3, while a score of 3.0 is observed for the simple completion rule. Consequently, interested parties and stakeholders are encouraged to engage in discussions surrounding the ethical implications that arise from the analysis of these studied responses, fostering deeper insights into the intersection of technology, education, and ethics [48].

4 CASE STUDIES AND EXAMPLES

Imagine you are a law student in the final year of your law degree, preparing for the final exam before being able to practice as a lawyer in your country. The exam covers 60 legal topics. However, you have studied 400 legal topics during your studies. You could look at them all periodically, but let's be honest: not even artificial intelligence can persuade you that you really should do that, right? Can AI help you to practice and sharpen your legal knowledge best? Yes, it very probably can. But first of all, how can we even measure your legal knowledge? And then, when we (hopefully nicely) disagree on that, how can AI be used to help you practice best?

Let’s add a note on case studies and learning environment. In a recent study, text mining was adopted to investigate legal exam scripts of an open-book final exam of a foundation law course in a British university to understand how students responded to textual triggers, briefing the exam [52]. The data included a simple manual reporting of the exam content, and corresponding measures of student performance. However, the students were expected to demonstrate knowledge of principles of criminal law and torts, raise legal issues and provide associated arguments with remedies, which are likely more complex than asking for the definition of a legal term. As such, the usefulness of text mining was severely bounded. Similarly, there is legal education data related to the exam preparation of final year undergraduate law students, and there are the AI tools to investigate that data, including AI instruments developed for the experiment.

i. Implementation in Educational Settings

Artificial intelligence (AI) technologies can be used in a wide variety of educational applications, from the development of adaptive assessments to the creation of educational robots (Schiff, 2021). New advances

have also been made in traditional educational tools, such as learning management and predictive analytic systems. The purpose of this writing is to analyze and assess legal knowledge of online learning students, then make a further assessment of their legislative drafting in educational settings by developing an AI tool. Those who are Programming and Informatics students, more than 90% male, and those who graduated from senior high school contributed most to the community [53]. Also, due to the fact that not so many online learning students process regular devices and low internet connection, this research provides some of the processing requirements and the way to combat the data by using an AI tool properly. This paper will show the realization of an electronic report assessment device designed to help students draw up legislation as a further assessment by using a neural network technology model to determine their cognitive structure on legislation. By using a system called Metadata Structure and Hetero Association Neural Network (MeSHANN - Meaning Structure Heuristic-Augmented Neural Network) model, such reports can easily be summarized by educators.

ii. Impact on Learning Outcomes

With the rise of Information Technology, it is common for teachers to use texts from the Internet, which can have negative consequences both inside the school environment and during the Grade Examination. Despite the various programs and laws that have been established, the copyright law still seems to play a minor role in the school system compared to the other regulations regarding the plagiarism of scientific works. The teaching of copyright law itself is still very neglected yet educational role of school is crucial. Because the school has not so far fulfilled its role in educating about copyright law, it is considered very necessary to develop and equip it [54].

The goal is mainly focused on problems arisen from the lack of proper copyright legal education, its importance, and the necessary components of good teaching of law to make it better function. It may not be a surprise that a recent attempt to create a copyright curriculum for teacher's inspectors has been made only this year and that the training of teachers about the copyright law and issues of informational culture has not been very common practice yet. It is worth noting, though, that the amount of interest in the questions concerning copyright law not only in academia but also among professionals thereby making the need for corresponding education appear all the more urgent. The lack of necessary legal awareness by teachers and the pressure exercised on them by students themselves and their families an essential criticism of the education system arise because of the problems that have surrounded schooling life [55].

5. FUTURE DIRECTIONS AND IMPLICATIONS

Artificial Intelligence (AI) has become popular in various disciplines, and the legal domain is no exception. Legal knowledge analysis and assessment are based on Bloom's Taxonomy Knowledge Levels and the legal text dataset from electronic legal documents in Indonesia. The use of authorization and classification techniques is intended to assist in analyzing and assessing legal knowledge correctly, quickly, and effectively. The analysis results can be used as feedback to improve student understanding of legal science. Good legal understanding can be used to increase legal compliance awareness and the Rule of Law. Comprehensive legal understanding in a jurisdiction or control system will reduce legal disputes and increase public confidence in legal institutions and regulatory compliance. Since this study used legal text as analytics material, a system was developed to extract legal text data to determine three features, namely context objective, legal tourism, and elements of legal certainty and rights. A classification system was developed to sort Legal Knowledge and Analysis & Assessment Features, focusing on the Knowledge Level Dimension of Bloom's Taxonomy. The interactions carried out were able to determine the most representative features of the legal text data, assisted by the developed tools. This analysis and assessment tool will help lecturers in giving feedback to students in explaining results of the analysis and writing

feedback based on student legal texts. The results of the assessment analysis vector will provide information to lecturers as a comparison of student knowledge with Legal Knowledge Application, Legal Comprehension, and Legal Strategies of the case. There was feedback from lecturers who stated that the legal analysis assessment results generated by the method of processing legal text developed were useful for providing feedback to students' legal text. Lecturers can provide appropriate and effective feedback in improving student understanding of legal science. Student improvement in understanding legal knowledge is followed by an increase in attention to legal problems and the complexity of the legal science process.

i. Emerging Technologies

Marshall McLuhan once wrote, "The university, in the actual sense, has ceased to exist." In the future, there will no longer be a need for traditional educational institutions as a source of both knowledge and control. Some feel that this will come as a substantial loss and will irretrievably detract from human dignity. Others see such an event as an invaluable step in human progress, one that could finally liberate the potential of every individual. Yet, everything hangs on what replaces the outdated paraphernalia of East Coast Ivy League schools. If the new network of wireless connections cannot emulate the trust and freedom that existed in the former ivory tower, and if it no longer protects the human spirit, then everyone is in for a very hard reality check. Today, in a series of heated memos, school administrators and district officials were notified that, following the recommendations of an assortment of experts, high school classes are to be changed. No longer will study of the quantum theory be solely the preserve of college seniors, but all intro physics classes will be adjusted to reflect 1999 data. A memo to the education excellence program concerns a suggestion to disband a team that just designed a new wall size interactive learning project. Cartoons are authored, flocking the President and others in front of apple labeled computers, while little children in backward caps adopt the contemplative pose of a thinker. Naturally, the media has picked up on the story, and the already infamous pictures spread outward like the nuclear blast of a supernova, a deadly cloud of embarrassment and decay.

McLuhan will not be realized. In the ongoing struggle for logistical tact and explanatory frenzy, St. Thomas Aquinas and Sir Isaac Newton have already exchanged their white robes for sport coats and ties. Schools, at least the few still clinging to existence, become the front line in the race to own and embody the future. Thus far, with no exception, the public schools have been unable to grasp, let alone harness, the eddies of change. Special interest groups and individual parents are tearing the already tattered fabric of educational policy in a variety of conflicting shreds. Art programs, always an easy target, are cut first. Reduced spending, shortened class periods, and decreased teacher involvement in curriculum planning has obliterated much of what until now has passed for normal art classes.

ii. Policy Recommendations

Major disruptions in the sociotechnical relationship to legal knowledge over the past decade have brought about the rebirth of experimentation with AI and algorithms. AI now has the capability to process significant textual corpuses and to analyze them, allowing legal information from legislations, access to justice mechanisms or civil party's (litigants, lawyers, judges, etc.) positions or routines to be compared quickly or, indeed, propose some kind of prediction. Awareness of these changes has, however, called for the development of a legal and educational critique (Schiff, 2021). While the power of AI and algorithms to offer new perspectives norms should not be ignored, the extrapolation of such capabilities does not necessarily justify the end of a very human and political approach to the uncertain knowledge of the law. With this in mind, it is essential to question AI's black box problems that more or less clearly hides (reference is made sometimes to intellectual property ownership, but also and mainly to the lack of intelligibility and ability to explain of algorithms). Opening up the black box requires an alternative education to legal knowledge from

the perspectives of law, social sciences or algorithms understanding that only a daily and concrete practice of these matters may one day be able to guarantee some kind of intellectual autonomy or even fierceness.

Besides, AI raises the difficult problem of the harmonization of regulation, while many technical and legal issues greatly depend on national legal traditions, data repartition and even languages (the extraction, national transpositions and especially translations of legal information being particularly difficult for algorithms). Competition between AI-cultures and ethical doctrines is already intense, not to mention the strategic and economic stakes involved. But law and legal practices seem particularly sensitive to those advances. At a quite ordinary level, algorithms and software are already bought and used in most law firms to seek reference to a case-law or a doctrine, to determine a strategy, to find or to write a litigation contract. Likewise, a number of states already entrust in whole or in part certain arenas of the fact-spatial judicial bureaucracy of AI: road traffic or minor offences fines obligatory fines are all recorded and sent using fixed automats; some tax decisions are automatically taken by algorithms after examination of the tax-payers declarations; in France, labor cases in the Work Inspection are already exclusively decided by algorithms (and automatically executed, as they enter in the employers' accounting). At another level, much more worrying from a political perspective, a number of theorists and practitioners predict the algorithmizing of a kind of authoritarian governance (risks scoring analysis that forecast hypothetic future crimes; the Chinese Social Credit System, now experimented in some millions inhabitants, that automatically adjust access to credit, health care, public transports or even online dating depending on politically correct or incorrect behaviors; predictive policing software widely used by western countries).

I. CONCLUSION

Can legal knowledge be analyzed and assessed using AI tools in the educational field? Legal study is an interdisciplinary domain that borrows not only from political theory, economics and sociology but also psychology, computing as well as philosophy and ethics. Legal analytics takes advantage of big data or utilizes machine learning to predict case outcomes is becoming increasingly popular, and AI technology is progressively relied on to predict the results of cases more accurately. Legal analytics is an interdisciplinary field that tries to predict court case results by integrating methods of law and data science. Machine learning models are based on empirical data, while the law is based on case law, written statutes and rules, and legal terms. This study seeks to extend the horizon of legal analytics with respect to analyzing and predicting legal knowledge with AI tools in case law. Legal knowledge consists of three concepts: (a) legal principles; (b) feature extraction for legal commonalities and (c) predication experiments. Used AI tools have achieved marked outcomes in a variety of demands within the cognitive computing fields, and more projects have been pursued in these sectors. Since legal learning is quite supportive, this study uses technology that emulates human writing to demonstrate the exploration and standardization.

1. SUMMARY OF KEY FINDINGS

f Cultural Intelligence and Legal Literacy on student performance in global educational assessments are very important.

Funding statement

This research was supported by authors.

Author contribution

All authors made an equal contribution to the development and planning of the study.

Data Availability Statement

Data are available from the authors upon request.

Conflict of Interest

The authors have no potential conflicts of interest, or such divergences linked with this research study.

Acknowledgements

The authors would like to acknowledge assistance of the Editor and Reviewers in the preparation of the article for publication.

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