

Enhancing Public Legal Literacy through AI-Based Storytelling and Explainable Systems

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Abstract - An Understanding legal information remain difficult for general public due to complex terminology and expert-oriented legal systems. Recent advancement in **artificial intelligence (AI)** offer a new opportunities to address this challenge by transforming abstract legal rules into intuitive narrative waste explanation. In particular, **AI-driven storytelling** has the potential to present legal concepts through the relatable scenarios that align with everyday experience.

This paper reviews existing research in a **computational storytelling**, AI-based learning systems, legal technology, and explainable artificial intelligence to examine their relevance to the **public legal education**. Based on this review, an AI-driven storytelling framework is proposed that generates accurate and personalized narratives grounded in the structured legal data. The framework adapts explanations to user context and information needs, enabling legal rights and responsibilities to be communicated in a clear and accessible manner.

By combining legal knowledge grounding with adaptive storytelling and **explainable AI techniques**, the proposed approach aims to reduce barriers to legal understanding for non-expert user, including tenants, that small business owner and the other everyday citizens. This work highlight the potential of AI enable narratives as a scalable solution for improving **public legal literacy**.

1. INTRODUCTION

Legal awareness is essential for empowering individual to understand their rights, duties, and available courses of action. However, legal knowledge is often highly complex technical, and primarily design for experts, making it largely inaccessible to the general public. Despite greater access to the legal resources via internet, a significant gap remains between available knowledge and public comprehension. Recent advancement in artificial intelligence (AI) have demonstrate a significant potential in addressing challenges

related to the information accessibility and learning. AI-based educational systems support personalized learning, adaptive content delivery, and automated knowledge generation, thereby improving user engagement and comprehension across a diverse domains. In parallel, computational storytelling has emerged as an effective approach for presenting complex concept through narrative structures, allowing users to contextualize abstract information within relatable real-world scenarios.

However, the application of AI-driven storytelling techniques in a legal domain remains limited. Most existing storytelling and generative AI systems operate without domain-specific constraints, raising concerns related to factual accuracy, interpretational validity and ethical reliability. These limitations are particularly critical in legal contexts, where inaccurate or misleading explanations can result in a serious consequence for a user.

Conversely, AI applications developed specifically for a legal woman have primarily focuses on analytical and predictive tasks, such as legal document classification, case outcome prediction, and legal research assistance. While these systems demonstrate a strong performance in professional legal environments, they are typically designed for use by legal experts. The explanations they provide are often technical and model-centric offering limited support for communicating legal concepts in an intuitive and user friendly manner to a general public.

Explainable Artificial Intelligence is essential for building transparency and trust in AI systems, particularly in sensitive domains such as law and education. However, most existing Explainable AI methods focus on technical explanations that are difficult for non-expert users to understand and offer limited support for learning. This highlights the need for an approach that combines legal knowledge with narrative-based, personalized, and explainable explanations. Accordingly, this paper reviews

existing research and proposes an AI-driven legal storytelling framework to enhance public legal literacy.

2. LITERATURE SURVEY

Artificial intelligence (AI) is increasingly being used in learning support systems, especially in fields that involve complex and specialized knowledge. Research spanning educational technologies, digital storytelling, and legal informatics indicates that traditional text-centric systems have often inadequate or non-expert users, as they fail to convey abstract or technical concepts in an intuitive manner. The limitations have motivated the exploration of alternative approaches that combine AI with a narrative-driven and explainable mechanism to improve clarity and accessibility for general users.

Computational storytelling research focuses on the automated creation, organization, and adaptation of narratives using algorithmic techniques. Studies in this area demonstrate that digital narratives need not follow a fixed linear structure; instead, they can evolve dynamically based on system logic or user interaction. Such adaptive and emergent storytelling models emphasize narrative coherence, user engagement, and flexibility. However, most computational storytelling applications remain confined to entertainment domains such as games, films, museums, and creative media, with limited application in educational or legal knowledge contexts [1].

Recent advances in large-scale generative AI models have further enhanced the capability of systems to produce fluent, human-like narratives and explanations with minimal human intervention. While this model shows promise in automating content generation, existing literature highlights critical concerns related to factual correctness, controllability, and ethical reliability. These concerns become particularly significant in high-stake domains such as law, where inaccurate or biased explanations can lead to serious consequences [4],[5].

Within the educational domain, AI-driven systems have been extensively studied for personalization and adaptive learning. Prior research demonstrates that learner modeling and dynamic sequencing of content can significantly improve learner engagement and comprehension. However, most existing educational AI systems prioritize instructional efficiency and assessment performance, often overlooking narrative-based or experimental explainable methods. As a result, learners may struggle to emotionally connect with or contextualize information presented to them [3], [7].

Legal AI research has largely focused on automating analytical tasks such as legal document classification, judgment prediction, and case outcome analysis. The development of large-scale legal datasets, particularly those tailored to the Indian judicial system, has improved the

performance of such systems and highlighted the importance of an explanation in legal decision-making. Despite these advancements, current systems are primarily designed for legal professionals and offer limited support for simplifying legal concepts for a general public [6]. Explainable AI has emerged as a critical requirement for AI systems operating in sensitive domains such as education and law. Existing explainable AI approaches aim to make model decisions transparent but often rely on technical explanations that are difficult for non-expert users to interpret. Narrative-based explanations, although potentially more intuitive and user-friendly, remain unexplored within legal AI research [9].

Furthermore, studies in cognitive science and learning psychology suggest that storytelling enhances comprehension and retention by embedding information within relatable and emotionally engaging contexts. These findings indicate that narrative-based explanations may be particularly effective for conveying complex legal concepts in an accessible and meaningful manner. In summary, while significant progress has been achieved independently in computational storytelling, AI-driven education, and legal natural language processing, existing literature reveals a clear lack of unified systems that integrate legal knowledge grounding, narrative generation, personalization, and explainability to promote public legal awareness and understanding.

3. COMPARATIVE STUDY AND ANALYSIS

To identify key limitations in existing approaches, a comparative analysis of computational storytelling, AI-driven education, legal AI, and explainable AI is conducted. The comparison is based on four dimensions: domain focus, explanation style, adaptability to users, and target audience. This analysis highlights how current systems emphasize certain strengths while overlooking others.

Table -1: Comparative analysis of existing approaches

Approach	Storytelling	Personalization	Explainability	Target Users
Computational Storytelling	Strong	Limited	Narrative coherence	Entertainment users
AI-based Educational Systems	Minimal	Strong	Performance-oriented	Students and educators
Generative AI Content	Implicit	Generic	Limited factual control	General users

Systems				
Legal AI and NLP Systems	Absent	Low	Technical, model-centric	Legal professionals
Explainable AI (XAI)	Rare	Low	Technical transparency	AI experts

This comparative analysis indicates that computational storytelling systems are highly effective in engaging users through adaptive and coherent narratives. However, these systems generally lack grounding in a factual and domain-specific knowledge, particularly in legal sensitive contexts. In contrast, legal AI systems demonstrate strong analytical and data-driven capabilities but often provide explanations that are technical and difficult for a non-expert user to comprehend.

AI-driven educational systems effectively personalize content based on the learner characteristics, improving engagement and comprehension. Nevertheless, these systems rarely employ narrative-based explanations, limiting contextual understanding and emotional connection for learners. Each of these approaches address of specific dimension-storytelling, legal reasoning or personalization while neglecting others.

Generative AI models partially bridge these gaps by enabling automated narrative generation. Despite their potential they introduce challenges related to factual reliability, controllability, and ethical fairness, which are particularly critical in the legal application. Similarly, explainable AI techniques aim to enhance transparency but often rely on abstract or technical explanations that are inaccessible to the general users.

Overall, existing approach tends to address storytelling, personalization, explainability, and legal reasoning in isolation. The absence of an integrate framework that combines legally grounded knowledge, adapting storytelling, user-centric personalization, and intuitive to explainability significance limit the effectiveness of a current system in prompting public legal awareness and understanding.

4. RESEARCH GAP AND CHALLENGES

Although notable progress has been made in a computational storytelling, AI-based learning systems, legal artificial intelligence, and explainable AI, existing literature reveals several gaps that limit their effectiveness in promoting public legal awareness.

A major gap lies in the absence of unified systems that combine legally grounded and validated knowledge with

narrative-based explanations. Computational storytelling approaches prioritize engagement and narrative coherence but typically operate without legal constraints or domain validation, making them unsuitable for explaining real-world legal concepts that demand accuracy and interpretational correctness. In contrast, legal AI systems focus on analytical and predictive tasks and are primarily designed for legal professionals, offering limited support for communication legal information in an accessible manner to non-expert user.

AI-based educational platforms effectively address personalization and adaptive learning through structured content delivery. However, they generally rely on instructional formats rather than narrative-driven explanations. Story-based learning, which fosters emotional engagement and contextual understanding, is particularly important for explaining abstract and interpretative domains such as law, yet remains insufficiently explored in current educational AI systems. Generative AI models enable efficient narrative generation but introduce challenges related to factual reliability, controllability, and ethical alignment, especially in legally sensitive contexts. Similarly, existing XAI techniques aim to improve transparency but often emphasize model-centric explanations, such as feature importance scores or rule-based outputs. While useful for experts this explanation formats are difficult to lay users to interpret and do not adequately support users comprehension.

In addition to these conceptual gaps, several practical challenges persist. Balancing legal precision with a narrative simplicity is inherently complex, particularly when explanations must remain accurate yet understandable. Ensuring adaptability across users with a diverse backgrounds and literacy levels further complicates system design. Moreover, though limited availability of a high-quality publically accessible by legal datasets especially within the Indian legal context poses a significant challenge to scalable and reliable implementation.

Overall, the literature highlights a clear need for an integrated framework that combines legally grounded knowledge, adaptive storytelling, personalization, and user-centric explainability. Addressing these gaps is essential for developing AI systems that not only analyze legal data but also make legal knowledge accessible, understandable, and meaningful for general public.

5. PROPOSED FRAMEWORK

To address the identified research gaps, this paper proposes a holistic AI-driven framework that integrates legally grounded knowledge representation, adaptive storytelling, personalization, and explainability to enhance public legal awareness. The proposed framework aims to explain complex legal provisions through simple, relatable

narratives while ensuring factual accuracy, transparency, and ethical compliance.

Framework Overview

The proposed system follows a modular architecture in which multiple interconnected components collaboratively transform legal information into user-friendly narrative explanations. The framework is designed to balance legal correctness with usability, ensuring that generated content remains both legally sound and easily understandable for non-expert users.

Key Components of the Framework

Legal Knowledge Repository

This component serves as the foundational knowledge base of the system. It comprises structured legal documents, statutes, case summaries, and judicial interpretations extracted from trusted legal corpora, including Indian legal datasets such as Indian Legal Documents Corpus (ILDC). Legal content is preprocessed, annotated, and indexed to ensure traceability and consistency during narrative generation [6]

Legal Concept Extraction and Mapping Module

This module identifies relevant legal concepts, entities, rights, duties, and penalties from the knowledge repository. Extracted concepts are mapped to real-world contexts and everyday scenarios, enabling abstract legal provisions to be transformed into meaningful narrative elements suitable for storytelling [1].

Narrative Generation Engine

The narrative generation engine converts mapped legal concepts into structured stories. Unlike unconstrained story generation, this module relies on predefined narrative templates and legal constraints to preserve factual correctness. Story progression is governed by causal logic, ensuring that each narrative event reflects valid legal reasoning rather than imaginative improvisation [1], [4].

Personalization and User Modeling Model

To enhance user engagement and comprehension, the framework incorporates user modeling techniques that dynamically adjust narrative complexity, language level, and contextual examples. Personalization is based on factors such as the user's legal literacy, educational background, and interaction history, aligning with principles observed in AI-based educational systems [3],[7].

Explainable Storytelling Layer

The explainable AI component embeds explanations directly within the narrative flow. Legal reasoning, consequences, and decision points are clarified using intuitive storytelling elements rather than technical model outputs. This narrative-based explainability bridges the gap between model transparency and user understandability [9].

Validation and Ethical Compliance Module

This module verifies generated narratives against legal rules and ethical constraints to prevent misinformation, bias, or hallucinated content. It ensures compliance with a legal standards and address challenges associated with the generative AI systems in a sensitive legal domains [4],[5].

User Interaction and Feedback Module

The system supports interactive user engagement, allowing users to ask follow-up questions, seek clarifications, or explore related legal concepts. User feedback is continuously collected and utilized to improve narrative quality, personalization accuracy, and overall system reliability.

Framework Workflow

The workflow begins with user input, such as a legal query or selected topic. Relevant legal knowledge is retrieved from the repository and processed for concept extraction. These concepts are then mapped into a legally constrained narrative, which is personalized according to user characteristics and enriched with embedded explanations. The generated story undergoes validation and ethical checks before being delivered to the user. Feedback collected during interaction is used for iterative system refinement.

Significance of the Proposed Framework

By integrating legally grounded knowledge, adaptive storytelling, personalisation, and explainable AI, the proposed framework overcomes the limitations of existing fragmented approaches. The framework offers a scalable solution for delivering legal information that is not only accurate but also accessible, engaging, and meaningful for the general public, thereby supporting broader legal literacy and informed civic participation.

6. FUTURE SCOPE

The proposed AI-enabled legal storytelling framework offers several promising directions for future enhancement. One important extension is the inclusion of multilingual support, which improves accessibility for users from diverse linguistic backgrounds, particularly in the Indian context. In addition, the framework can be further strengthened by supporting multimodal legal storytelling through the integration of audio and visual elements. This would help accommodate users with varying literacy levels and learning preferences.

Future work may also focus on advanced personalization by modeling long term user behavior and developing adaptive learning pathways. Such an approach would enable users to gradually build legal knowledge over time, rather than receiving isolated explanations. Furthermore, integrating real-time connections to official legal databases would allow the system to stay updated with recent legal amendments and judicial developments. Finally large-scale user studies and robust evaluation mechanisms can be conducted to assess user comprehension, fairness and overall usability of AI-based legal explanation systems.

7. CONCLUSION

This paper analysed computational storytelling, AI in education, legal AI, and explainable AI to examine their strengths and limitations in enhancing legal awareness among the public. Current approaches address engagement, personalization, and legal accuracy separately, but not in the integrated manner for improving public understanding of a law. To bridge this gap, an AI-assistant legal storytelling framework has been proposed, combining legally grounded knowledge, narrative generation, personalization, and explainable storytelling. The framework aims to provide the accessible, engaging, and credible legal information to lay people. Future enhancement could include multilingual support, multimodal storytelling real-time updates of a legal information. Overall, this approach offers a scalable solution to narrow the divide between complex legal knowledge and public comprehension, leveraging artificial intelligence to make legal storytelling effective and widely accessible.

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