

Addressing the Limitations of Conventional Moot Courts: A Metaverse Based Model for Enhancing Judicial Training in Indonesia

1st Nur Putri Hidayah
2nd Galih Wasis Wicaksono
3rd Muhammad Ilham Perdana
4th Andaru Adi Wardoyo
5th Sholahuddin Al Fatih

^{1,2,3,4,5} Universitas Muhammadiyah Malang, Indonesia

✉ nurputri@umm.ac.id

Article Info

Submitted: September 21, 2025

Revised: March 12, 2026

Accepted: May 15, 2026

Keywords:

Moot Court; Metaverse; Gap; Technology.

How to cite [Chicago Manual of Style 17th edition (full note)]: Nur Putri Hidayah, Galih Wasis Wicaksono, Muhammad Ilham Perdana, Andaru Adi Wardoyo, and Sholahuddin Al Fatih, "Addressing the Limitations of Conventional Moot Courts: A Metaverse Based Model for Enhancing Judicial Training in Indonesia" *Jambura Law Review* 8, no. 1 (2026): 326–341.

Abstract

This article examines the limitations of conventional trial simulations (moot courts) in the training of prospective judges in Indonesia, which have not been able to meet the needs of judicial competency in the digital era. Previous studies have generally focused on the development of legal technology or moot court practices in legal education in general, but have not specifically examined the use of immersive technology in judicial training accompanied by an operational regulatory framework. This research aims to develop a Metaverse-based trial simulation model to bridge the pedagogical and normative gaps in judicial education. This research uses a doctrinal legal analysis approach and a qualitative empirical study. The doctrinal analysis was conducted through a review of legislation, legal doctrine, and Supreme Court policies, while the empirical study was obtained through observations of trial simulation practices and interviews with teaching judges and trainees. The results show that conventional moot courts are still limited in terms of space, time, and participation, and are not yet supported by normative regulations that integrate digital technology into the judge training curriculum. The article proposes a Metaverse-based simulation model that provides an immersive virtual space for repetitive individual practice, role-playing, and the integration of key features that support trial simulation and role-based interaction. Normatively, the implementation of this model can be initiated through a Decree of the Chief Justice of the Supreme Court as an operational instrument for limited trials, allowing for a gradual evaluation of its effectiveness. This article contributes to offering an innovative training model and an applicable normative framework for the integration of immersive technology in judicial education in Indonesia.

©2026 – Putri Hidayah, Galih Wasis Wicaksono, Muhammad Ilham Perdana, Andaru Adi Wardoyo, and Sholahuddin Al Fatih.

Under the license CC BY-SA 4.

Introduction

Digital transformation has changed the landscape of higher education globally, including in the realm of legal education.¹ A shift from conventional approaches to technology-based learning is inevitable. In many countries, legal education systems are adapting to the integration of information technology,² such as e-Courts,³ online legal database systems,⁴ and software-based simulations for litigation practices.⁵ This shift reflects the urgent need to produce law graduates who understand the substance of the law and demonstrate the capability of operating the digital devices that support the modern justice system.⁶

The legal professionals, particularly judges, now demand more complex competencies. In other words, understanding legal norms is not enough.⁷ Processing digital evidence, participating in online hearings, and managing the dynamics of virtual communication are an integral part of today's judicial role.⁸ This requires the education of aspiring judges that allows them to adopt a new theoretical, applicable, and technology-based approach.

¹ Diana Setiawati et al., "Transformasi Teknologi Dalam Hukum Dagang Internasional: Regulasi Dan Penyelesaian Sengketa Di Era Digital," *Borobudur Law and Society Journal* 2, no. 5 (2023): 220-31, <https://doi.org/10.31603/10891>; Jeannetha Alberthine, *Transformasi Peran Regulator Dan Adjudikator Dalam Era Digital: Menanggapi Tantangan Dan Peluang Baru*, 7, no. 1 (2024): 346-55, <https://doi.org/https://doi.org/10.56301/csj.v7i1.1489>.

² Karina Palkova and Elena Agapova, "Legal Tech in Legal Education: Global Perspectives and Challenges from the Latvian - Ukrainian Experience," *SOCIETY. INTEGRATION. EDUCATION. Proceedings of the International Scientific Conference* 5 (May 2021): 414-25, <https://doi.org/10.17770/sie2021vol5.6166>; Zhi Li and Wenxiang Zhang, "Technology in Education: Addressing Legal and Governance Challenges in the Digital Era," *Education and Information Technologies* 30, no. 7 (2025): 8413-43, <https://doi.org/10.1007/s10639-024-13036-9>; Alfonso Renato Vargas-Murillo et al., "The Integration of Digital Technologies in Legal Education: A Systematic Review of Trends and Challenges," *2024 IEEE 4th International Conference on Advanced Learning Technologies on Education & Research (ICALTER)*, December 10, 2024, 1-4, <https://doi.org/10.1109/ICALTER65499.2024.10819212>.

³ Rozha Kamal Ahmed et al., "Impact of E-Court Systems Implementation: A Case Study," *Transforming Government: People, Process and Policy* 15, no. 1 (2021): 108-28, <https://doi.org/10.1108/TG-01-2020-0008>.

⁴ James McGrath and Andrew P. Morriss, *Online Legal Education & Access to Legal Education & the Legal System*, 70 (2020): 49; Raliat Alabi, "Legal Research without Barriers: Free Legal Databases as Alternatives for Law Students," *International Journal of Legal Information* 53, no. 2 (2025): 148-54, <https://doi.org/10.1017/jli.2025.10065>.

⁵ M. R. Voskobitova, "Online Simulations for Teaching Professional Legal Skills," *Kutafin Law Review* 8, no. 4 (2021): 519-45, <https://doi.org/10.17803/2313-5395.2021.4.18.519-545>; Haotian Li and Juan Xu, *The Application of Virtual Simulation Technology in Law Teaching Practice BT - Emerging Technologies for Education*, ed. Weijia Jia (Springer International Publishing, 2021).

⁶ Deddi Fasmadhy Satiadharmanto et al., *Fakultas Hukum Di Indonesia: Perubahan Dan Penyesuaian Dalam Menyongsong Revolusi Industri 5.0 Dengan Perspektif Pemikiran Islam*, 2, no. 1 (2024): 45-62; STIKES Yahya Bima, *Integrasi Ilmu Hukum Dan Teknologi Etika Dan Regulasi Dalam Era Digital* (2025).

⁷ Ammar Zafar, "Balancing the Scale: Navigating Ethical and Practical Challenges of Artificial Intelligence (AI) Integration in Legal Practices," *Discover Artificial Intelligence* 4, no. 1 (2024): 27, <https://doi.org/10.1007/s44163-024-00121-8>; Marcus Smith, "Integrating Technology in Contemporary Legal Education," *The Law Teacher* 54, no. 2 (2020): 209-21, <https://doi.org/10.1080/03069400.2019.1643647>.

⁸ Dr Parineeta Goswami and Aarushi Goswami, "Virtual Justice: The Role of Technology in Transforming Criminal Administration," *SSRN Electronic Journal*, ahead of print, 2025, <https://doi.org/10.2139/ssrn.5121477>; Anupam et al., *Transforming Access to Justice in the Digital Age*:

In Indonesia, efforts to digitise the judiciary have been initiated under Supreme Court Regulation Number 1 of 2019 concerning Electronic Case Administration and Trials in Court. However, similar innovations have not received much attention in the academic system of aspiring judges. Law academies have relied on traditional teaching methods and simulated conventional trials (moot courts). Moot court activities, however, may not fully represent the real dynamics in a courtroom, particularly in a digital context.

The practice of conventional trial simulation has so far played an essential role as a bridge between legal theory and practice.⁹ A moot court enables aspiring judges and law students to understand the flow of the trial, prepare arguments, and practice speaking skills in an official setting. However, this method faces several obstacles when applied in the context of digital justice development.

First, the facilities and infrastructure available are generally simple. Mock courtrooms, props, and role arrangements are helpful, but they have not been able to provide an experience that comes close to the reality of the modern courtroom, which is now heavily reliant on technology. Second, its implementation tends to be tied to the physical space and schedule of the institution, creating hiccups in learning flexibility. Mock hearings are usually conducted communally, involving many participants at once, so opportunities to hone personal skills, such as controlling the rhythm of the trial or overcoming technical glitches, are relatively lacking. Third, the focus of moot courts is still dominant on formal procedures and procedural sequences. This aspect is indeed important, but it has not answered the need for new skills that have arisen due to the digitalization of the judiciary, such as electronic evidence examination, remote witnessing, or online audience management.

The dilemma of the competency of aspiring judges arises from the imbalance between normative demands and operational needs in the field.¹⁰ Aspiring judges are expected to master legal materials while demonstrating the ability to lead virtual trials, understanding digital protocols, and making decisions under the pressure of courtrooms, both in a conventional scope and online. The cognitive, affective, and psychomotor aspects are not honed in a balanced way in the current education system. This gap undermines the readiness of graduates to perform judicial duties adaptively and professionally.

The Role of E-Courts, 8 (2023): 43; Jamil Afzal, "Future of Legal Tools and Justice," in *Implementation of Digital Law as a Legal Tool in the Current Digital Era*, by Jamil Afzal (Springer Nature Singapore, 2024), https://doi.org/10.1007/978-981-97-7106-6_8.

⁹ Shoyaib Ahmad and Raj Kumar, "Transforming Legal Education in India: The Role of Clinical Legal Education and Trial Advocacy," preprint, Law, May 14, 2025, <https://doi.org/10.33774/coe-2025-12ncq>; Vidhi Singh and Raj Kumar Yadav, "Transforming Legal Education: The Role of Clinical Legal Education in Bridging Theory and Practice," preprint, SSRN, 2025, <https://doi.org/10.2139/ssrn.5244915>.

¹⁰ Asif Khan and Muhammad Abid Hussain Shah Jiliani, "Expanding the Boundaries of Jurisprudence in the Era of Technological Advancements," *IJUM Law Journal* 31, no. 2 (2023): 393-426, <https://doi.org/10.31436/iiumlj.v31i2.856>.

Several studies on legal education offer solutions, ranging from text-based simulations to the use of video or online-offline combinations.¹¹ Although these approaches contribute to the improvement of cognitive understanding, they have not been able to create a complete and immersive learning experience. Guaranteeing authentic experiences that involve hands-on interaction in an environment that resembles a courtroom is a challenging task.¹²

Metaverse technology provides new opportunities in answering these challenges. As a three-dimensional virtual space that allows for real-time interaction, the Metaverse offers more realistic and interactive trial simulations.¹³ This technology opens up the possibility for students to perform judicial roles in a digital environment that resembles real-world practice. The incorporation of virtual reality (VR), augmented reality (AR), and artificial intelligence (AI) elements enhances the dimension of legal learning in a more practical direction.¹⁴

Despite this potential, existing studies remain limited in several important respects. Prior research has generally focused on the application of digital technologies within law faculties or on moot court practices in general legal education,¹⁵ rather than on judicial academies specifically designed for training aspiring judges. In addition, moot court activities in previous studies are predominantly designed as collective exercises¹⁶ involving multiple participants, with limited attention to the possibility of individual-based simulations that enable independent and continuous skill development.¹⁷ Moreover, these studies rarely address how immersive technologies such as the Metaverse can be systematically integrated into judicial training alongside a clearly articulated framework for norm formation. As a result, the absence of such integrative models has implications not only for the effectiveness of skill development but also for

¹¹ Nur Putri Hidayah et al., "Metaverse as the Solution to the Absence of a Constitutional Court Moot Courtroom in Universities," *Jurnal Pengabdian Hukum Indonesia (Indonesian Journal of Legal Community Engagement) JPHI* 7, no. 2 (2024): 213–40, <https://doi.org/10.15294/jphi.v7i2.2477>.

¹² Susan A. Bandes and Neal Feigenson, *Virtual Trials: Necessity, Invention, and the Evolution of the Courtroom*, 68 (2020): 1275; Meredith Rossner and David Tait, *Virtual Technology and the Changing Rituals of Courtroom Justice*, 98 (2023): 251.

¹³ Joni Laksito and Agus Wibowo, "Mengubah Budaya Pendidikan Hukum Menggunakan Pembelajaran Simulasi Metaverse," *JURNAL HUKUM, POLITIK DAN ILMU SOSIAL* 1, no. 2 (2023): 95–117, <https://doi.org/10.55606/jhpis.v1i2.1532>; Pinar Çağlayan Aksoy, "Legal Services and the Metaverse," in *Research Handbook on the Metaverse and Law*, ed. Larry A. DiMatteo and Michel Cannarsa (Edward Elgar Publishing, 2024), <https://doi.org/10.4337/9781035324866.00022>.

¹⁴ Marshanda Adella D. Matona et al., "Juridical Review Of Fine Art Works Created Using Artificial Intelligence Technology Art Generator," *Estudiante Law Journal* 7, no. 3 (2025): 722–40, <https://doi.org/10.33756/eslaj.v7i3.31295>.

¹⁵ Nur Putri Hidayah et al., "Metaverse Ruang Sidang Semu Mahkamah Konstitusi: Transformasi Digital Pendidikan Hukum Di Fakultas Hukum Universitas Muhammadiyah Sumatera Utara: Metaverse of the Constitutional Court's Courtroom: Digital Transformation of Legal Education at the Faculty of Law, University of Muhammadiyah North Sumatra," *Jurnal Dedikasi Hukum* 5, no. 1 (2025): 36–48, <https://doi.org/10.22219/jdh.v5i1.39554>.

¹⁶ Lang Tang, "The Effective Application of 'Moot Court' in Law Teaching," *2021 2nd International Conference on Computers, Information Processing and Advanced Education*, May 25, 2021, 240–43, <https://doi.org/10.1145/3456887.3456940>.

¹⁷ Hidayah et al., "Metaverse as the Solution to the Absence of a Constitutional Court Moot Courtroom in Universities."

the legitimacy of judicial training curricula in responding to the evolving demands of digital justice.

This research aims to examine the normative and empirical gaps in trial simulation practices and formulate Metaverse-based models relevant to the education of aspiring judges. The goal is directed not only at the design of pedagogical innovations, but also at the preparation of the basis for legal arguments that can justify the use of immersive technology in the framework of judicial education. The resulting model is expected to bridge the integration gap between legal norms, practical needs, and technological developments. Furthermore, this study offers strategic recommendations for the development of effective policies and regulatory instruments, ensuring that the use of the Metaverse can become an integral part of legal education curricula, judicial training, and modernization of the judicial system in Indonesia.

This article is structured as follows: The next section describes the research methodology, which combines doctrinal (normative) legal analysis and a qualitative empirical approach. The discussion is organized into four interconnected sections. The first section outlines the theoretical and juridical foundations of judicial education in the digital era. The second section evaluates the limitations of conventional moot court practices in training prospective judges. The third section analyzes the normative gaps in the regulation of trial simulations within judicial education. The fourth section presents the conceptual design of a Metaverse-based trial simulation model, along with its normative and pedagogical implications, including its relevance for future policy development.

The proposed model is presented at a conceptual level, emphasizing system logic, learning scenarios, and key features that support immersive and flexible trial simulations, without detailing technical specifications due to considerations related to potential intellectual property protection. The final section concludes by summarizing the main findings and outlining recommendations for policy development and future research.

Problem Statement

Moot court simulations are an important method in training prospective judges. However, their implementation in Indonesia still faces limitations in terms of space, time, and participation. They tend to be collective in nature, limiting individual and flexible training. Furthermore, there is no clear regulatory framework that governs the standards, methods, or integration of technology in moot court simulations as part of judicial education. This creates a gap between the need to develop legal skills and the normative support within the prospective judge training system.

The development of immersive technology, particularly the Metaverse, opens up opportunities for more flexible and interactive trial simulation models. However, its use has not yet been systematically integrated, either in terms of learning design or its normative basis.

Based on this, this research is formulated in the following questions:

1. What are the theoretical and juridical foundations of judicial education for aspiring judges in the digital era?
2. What are the limitations of implementing conventional moot courts in training prospective judges in Indonesia?
3. What are the normative gaps in the regulation of trial simulations in judicial education?
4. How can a Metaverse-based trial simulation model be conceptually designed and what are its normative and pedagogical implications?.

Methods

This study employs a combination of doctrinal (normative) legal research and empirical legal research methods.¹⁸ Both methods were applied simultaneously because they were deemed appropriate for analyzing normative and empirical gaps in trial simulation practices, while simultaneously formulating an appropriate normative regulatory model for the education of prospective judges.

In the normative legal research method, a legal regulatory approach is used by comparing Law No. 48 of 2009 concerning Judicial Power and Law No. 49 of 2009 concerning General Courts, Supreme Court Regulations, and policies related to the education of prospective judges served as primary legal materials. This was followed by secondary legal materials in the form of scientific literature, journal articles, and previous research findings related to technology-based legal education; as well as non-legal materials related to virtual reality technology. A legislative approach was used to identify gaps in norms that do not yet regulate digital-based trial simulations.

The empirical study was conducted using a qualitative approach through interviews. The informant determination technique used purposive sampling, by selecting parties with direct experience in training prospective judges and legal practitioners. This study involved two prospective judges who had completed judicial training, one Supreme Court civil servant who technically handled prospective judge training, two judicial judges, and one advocate. The research instrument, an interview guide, was used to maintain consistency in the questions, covering aspects of the trial simulation implementation, limitations encountered, and practical needs not yet addressed in the training system. Informant data was kept confidential in accordance with research ethics regulations.

Empirical data were analyzed using a thematic analysis approach, through data reduction, coding, categorization, and interpretation to identify key patterns and themes. This empirical study also included contributions from a team from the informatics field who examined the conceptual feasibility of Metaverse technology. This analysis was not directed at designing a technical system, but rather at assessing the alignment between the technology's potential and the normative needs of prospective judge training.

¹⁸ Yun-Chien Chang and Peng-Hsiang Wang, "Empirical Foundation of Normative Arguments in Legal Reasoning," *European Journal of Empirical Legal Studies* 1, no. 1 (2024): 69–88, <https://doi.org/10.62355/ejels.18070>.

In this study, data were analyzed descriptively and analytically using deductive reasoning as the primary approach. The results of the normative study were then compared with the empirical findings to identify existing gaps. By integrating these two approaches, this study aims to develop legal arguments that connect the normative framework with practical realities and formulate recommendations regarding the use of Metaverse-based trial simulations in the education of prospective judges.

Theoretical and Juridical Construction of the Judicial Academy for Aspiring Judges in the Digital Era

The preparation of aspiring judges in Indonesia is regulated by Law Number 48 of 2009 concerning Judicial Power and Law Number 49 of 2009 concerning the General Court. Together, these laws restate the judiciary's essential principles independence, professionalism, and accountability and at the same time highlight the role of continuing education as a crucial element in sustaining judicial competence. Judicial education cannot remain focused solely on substantive law. It also needs to prepare judges with the kinds of skills that are directly relevant to the realities of modern court practice. The importance of this shift has been underscored since the Supreme Court introduced Regulation No. 1 of 2019 on Case Administration and Electronic Trials, which formally marks Indonesia's movement toward a digital judicial ecosystem.

Future judges are expected to be capable of presiding over online trials while still guaranteeing the right of both parties to be heard (*audi et alteram partem*). In practice, this is not always easy, as problems such as unstable internet connections or parties speaking over one another can arise. Beyond this, judges must also learn to adjust to new technologies in the courtroom, from running virtual public hearings to directing witness examinations conducted remotely.¹⁹ Additionally, aspiring judges need to be ready to face immersive situations that resemble real courtrooms, maintain order, provide fair speaking opportunities, and control online interactive dynamics.²⁰ Another aspect that is no less important is learning flexibility. Candidates for judges need space to practice these skills individually or in groups, without worrying about the office time limit. Furthermore, they will always have the opportunity to repeat certain scenarios to deepen particular skills.

This shift in competency requirements demonstrates that technology-related skills have become an integral part of judicial capacity. However, the regulatory framework governing judicial education has not fully adapted to these changes. The Supreme Court's internal policies regarding the training of prospective judges, including those provided through judicial education and training institutions, generally emphasize mastery of doctrinal law, procedural law, and conventional trial practices. While this framework provides a systematic basis for the formation of judges, it has not explicitly integrated

¹⁹ Husnul Khatimah, "E-Judiciary: Keabsahan Pemeriksaan Saksi Virtual Dalam Sistem Peradilan Modern," *Indonesian Journal of Islamic Jurisprudence, Economic and Legal Theory* 2, no. 4 (2024): 2173–84, <https://doi.org/10.62976/ijjel.v2i4.810>.

²⁰ Nwanneka Flora Ehirim and Ugochukwu Ehirim, *Nigerian Children's Right to Be Left Alone on the Metaverse: A Comparative Analysis*, 19, no. 1 (2026): 19–45, <https://doi.org/10.33756/jelta.v19i1.37909>.

digital competencies or the use of immersive technology as part of a standardized training methodology.

Supreme Court Regulation Number 1 of 2019 does regulate the technical aspects of electronic trials, but it does not yet address pedagogical design or trial simulations within the context of prospective judicial education. Therefore, there is a normative gap between the demands of digital judicial practice and the regulatory instruments governing judicial education. This gap does not indicate a lack of regulation, but rather the lack of explicit normative integration of digital and immersive technologies within the formal educational framework of prospective judges.

Empirical findings from interviews also reinforce this gap. Informants, including prospective judges, civil servants tasked with supporting judicial training, and judicial judges, stated that training still focuses on conventional trial simulations and has not systematically integrated digital technology as part of the learning method. Furthermore, training remains collective and limited by time and space, resulting in limited opportunities for prospective judges to practice independently and repeatedly. Although electronic trial practices have been implemented, there are no learning standards specifically designed to train technical and interactive skills in the context of digital trials. This indicates a mismatch between the development of technology-based judicial practices and the still-conventional education and training system.

In such a gap, the Metaverse can be positioned as a potential instrument to bridge normative demands and empirical needs. This immersive technology offers prospective judges the opportunity to practice in a realistic simulated environment, dealing with complex virtual trial scenarios while internalizing the principles of justice in a digital context. However, its use requires a clear legal foundation so that it is not only seen as a technical innovation, but also a legitimate part of the state's strategy to form future judges who are professional, adaptive, and able to uphold the principles of justice in the midst of the digital transformation of the judiciary

Evaluation of Conventional Mootcourt Practice in the Education of Prospective Judges.

For decades, moot courts have been considered a cornerstone of legal education in law schools. The judicial academy has likewise adopted these exercises for judge trainees, using them as a way to narrow the gap between legal theory taught in the classroom and the realities of courtroom practice. This activity enables students to practice procedural skills, prepare legal arguments, and comprehend the trial's flow. Normatively, moot courts support the formation of procedural legal competencies that are essential in the judicial system.²¹

Despite serving a strategic function, the practice of conventional moot courts in Indonesia faces several shortcomings. First, moot courts are often offered as an extracurricular activity, leaving these practices with no adequate curricular weight. Second, a lack of physical facilities, such as mock courtrooms, trial equipment, and actors, makes

²¹ H. Iwan Rasiwan, *Dinamika Sistem Peradilan Pidana Indonesia* (Raja Grafindo, 2025).

simulations less realistic. Third, in several instances, moot court activities tend to be ceremonial or oriented toward competition, rather than reflective learning that emphasises the mastery of practical skills.

This weakness has an impact on the lack of readiness of aspiring judges to face the real complexity of the courtroom, especially those that have been digitized. Moot courts do not prepare participants to understand the technical obstacles of online hearings or to manage the technical and procedural dynamics of online hearings. As a consequence, law graduates and participants in the judicial academy experience competency gaps when entering judicial practice.

Findings from interviews with young judges who have undergone judicial training further reinforce this observation. One informant explained that "This training primarily focuses on how to conduct conventional trials, while exposure to managing the dynamics of online trials is still very limited. These findings reveal two dominant patterns: the continuation of conventional procedural training and the absence of standardized digital-based simulation methods.²² As a result, participants tend to master traditional court procedures without being adequately prepared to engage with the technological dynamics of contemporary judicial practice.

Another dilemma arises because pseudo-trials can only be conducted communally, considering that they require many actors at once. This condition will not allow trials to be carried out individually to train the personal skills of candidates. The limitation of mock courtrooms in educational institutions also restricts the implementation of moot courts to only be carried out during working hours. This situation reduces the flexibility of learning and shows the limitations of conventional approaches.

Conventional moot courts do not address all the practical skills needed by aspiring judges. Empirical weaknesses in the form of limited space, time, and lack of technological integration are reinforced by normative loopholes. Existing regulations, such as Supreme Court Regulation (Perma) No. 1 of 2019 concerning e-Court, only regulate the practice of electronic trials in court, not the education of aspiring judges. To date, there has been no rule that stipulates trial simulations, particularly in digital form, as a standard for the judge's education curriculum. This void creates a gap between the normative demands of modern justice and the conventional methods of judicial education. This situation also emphasises the need to transform learning into a more immersive and flexible form, aligning with digital developments, one of which is through the use of Metaverse technology.

Metaverse-Based Trial Simulation as a Model for Transforming the Education of Aspiring Judges

The shortcomings of conventional moot courts and the existing normative gaps underscore the need for a more structured and adaptive judicial training model. In this

²² Dias Rizki Aprilinda, "Mitigating Discrimination and Privacy Threats in Algorithmic Pricing through Personal Data Protection Law in Indonesia," *Estudiante Law Journal* 7, no. 3 (2025), <https://doi.org/10.33756/eslaj.v7i3.32879>.

context, Metaverse-based trial simulations are conceptualized not simply as technological innovations, but as operational learning models comprising several interrelated components supported by interactive virtual simulation features. These components include: (1) clearly defined learning objectives aligned with judicial competencies, such as the judge's ability to manage a trial in an orderly and fair manner; (2) a library of scenarios reflecting the various stages of the court process, such as the opening of the trial, online witness examination, and the closing of the trial; (3) a role and permission structure that simulates positions in a real courtroom, with arrangements for speaking turns and the authority of each actor; (4) an assessment rubric to evaluate participant performance, for example in aspects of trial control, procedural accuracy, and decision-making; (5) a data recording and governance mechanism to ensure accountability, such as reviewable recording of the virtual trial; and (6) a feedback loop that enables iterative learning, through evaluation and performance improvement after the simulation is conducted. Through this structure, Metaverse enables a more systematic, scalable, and flexible approach to judicial training.

The design of Metaverse-based trial simulations must remain grounded in procedural law and fundamental judicial principles. Moot courts using the Metaverse must still be designed on the basis of civil and criminal procedural law, as well as fundamental judicial values, such as *audi et alteram partem*, openness, and judicial independence. Technology in this case serves as a support, not a substitute, for these values.²³ The application of digital identity authentication, for example, is not merely a technical aspect, but also an important exercise for prospective judges to ensure the legitimacy of the parties involved in the trial. Automatically stored trial recordings provide an opportunity for aspiring judges to understand the function of recorded evidence as an instrument of openness and accountability. The role structure in the virtual courtroom also requires participants to act according to their judicial positions, including arranging their speaking turns and maintaining order, thereby maintaining the principles of fair justice.

The metaverse also addresses the shortcomings of moot courts, which limit activities to working hours and a communal setting.²⁴ Virtual simulations, on the other hand, can take place at any time, both individually and in groups, allowing the candidates to practice flexibly. They can rehearse scenarios to hone specific skills, such as dealing with technical issues in an online trial or managing the dynamics of online hearings.

However, the challenge remains. From the normative side, no rule explicitly regulates the use of the Metaverse in judicial education. From a technical point of view, the availability of devices and networks is a vital requirement. From the pedagogical side, integrating it into the curriculum must be done carefully, so as not to reduce a substantial understanding of procedural law.

The metaverse should not be understood merely as a modernisation of teaching methods. More than that, it can be seen as a strategy to bridge the gap between legal norms and the

²³ Erica Natalia Rombe and Amir Ilyas, *Social Media-Based Triangular Fraud and Cyber Law Enforcement: An Indonesian Transnational Digital Crime Perspective*, 19, no. 1 (2026): 62–81.

²⁴ Nur Putri Hidayah et al., "Implementation of Virtual Reality Moot Court for Simulation and Procedural Law Learning of the Constitutional Court," *JOIV: International Journal on Informatics Visualization* 8, no. 4 (2024): 2444, <https://doi.org/10.62527/joiv.8.4.3125>.

empirical needs encountered in legal education practice. This model also opens up space for the creation of a new regulatory framework that can legitimise the use of immersive technology. This will be the subject of discussion in the following section.

Relevance and Direction of Digital Legal Education Policy Development

The gap between norms and practices revealed in this study shows that the education of prospective judges can no longer rely on the old approach. In training at the Supreme Court, trial simulations are still dominated by traditional moot courts, which can only be conducted in physical spaces, during specific working hours, and with the presence of many parties at once. Such simulations place greater emphasis on procedural formalities, thereby failing to prepare prospective judges to deal with the increasingly apparent complexities of digital trials. From a normative perspective, the lack of explicit regulations regarding the integration of digital technology into judicial education reflects a gap in the scope of the Supreme Court's internal policy development.²⁵ As an institution constitutionally mandated to manage judicial power and supported by its organizational, administrative, and educational authority, the Supreme Court has the competence to formulate internal policies governing the training of prospective judges.²⁶

In this context, the Supreme Court can initiate policy measures through internal administrative instruments, particularly in the form of Decrees of the Chief Justice. From a legal drafting perspective, these instruments constitute concrete administrative decisions (*beschikking*)²⁷ appropriate for regulating specific programs, including judicial training models. Unlike Supreme Court Regulations, which generally aim to establish binding legal norms in the field of judicial procedure, Decrees of the Chief Justice provide a more flexible and proportionate instrument for introducing and implementing innovations in judicial education. The Chief Justice's Decree allows the Supreme Court to design and implement a pilot project for a Metaverse-based trial simulation, without prematurely establishing it as a generally binding norm. In this regard, the policy remains adaptive, evaluative, and limited in scope, yet retains sufficient institutional legitimacy.

Rather than directly formalizing the model into a Supreme Court Regulation, which is normative and generally binding, the development of Metaverse-based judicial training is more appropriately placed within the realm of internal policy and institutional management. Therefore, its regulation should remain within an administrative instrument specifically designed for educational and organizational purposes.

²⁵ D. Matona et al., "Juridical Review Of Fine Art Works Created Using Artificial Intelligence Technology Art Generator."

²⁶ Muthi'ah Alamri, "Constitutional Courts and the Protection of Constitutional Rights: A Comparative Analysis of Institutional Authority in Indonesia and Morocco," *International Journal of Constitutional and Administrative Law*, September 30, 2025, 116–30, <https://doi.org/10.66502/0wcva437>; Putra Perdana Ahmad Saifulloh et al., "Legal Policy on Sports Qualifications in Indonesia: Constitutional Implications of Constitutional Court Decision No. 52/PUU-IX/2011," *International Journal of Constitutional and Administrative Law*, March 11, 2026, 54–74, <https://doi.org/10.66502/rct6q772>.

²⁷ Bandung Law College et al., "Environmental Law Enforcement Through State Administrative Legal Instruments in Environmental Cases in Indonesia," *JOURNAL OF SUSTAINABILITY SCIENCE AND MANAGEMENT* 19, no. 1 (2024): 138–53, <https://doi.org/10.46754/jssm.2024.01.012>.

In this context, curriculum adjustments can be placed within the broader institutional function of the Supreme Court in conducting judicial training, particularly in responding to the ever-growing demands for judicial competence in the digital era. Training modules can be geared towards digital situations: how prospective judges assess electronic evidence, manage expert witnesses remotely, or deal with technical disruptions during online hearings. These changes are important because they provide real training opportunities for prospective judges to prepare them for modern judicial practices, while ensuring that every step remains within the legal framework.

The Supreme Court's policy could ultimately have a broader impact than just internal reform. If the implementation of the Metaverse in the judicial environment proves successful, it has the potential to become a benchmark for the development of digital legal education in Indonesia. Law faculties can also take steps to align parts of their curricula with the standards applied in judicial education. In this way, the bridge connecting basic legal education in higher education with professional education for judges will become stronger.

Further research is still needed and highly warranted. From a legal perspective, more rigorous normative studies are needed to assess whether the use of the Metaverse is truly in line with the principles of fairness, openness, and legal certainty in judicial education. Meanwhile, from a technological perspective, development efforts can be focused on features that directly relate to Indonesian judicial practices, such as identity authentication for parties involved, integration of court recordings as evaluation materials, and alignment with the e-Court system.

The policy formulated by the Supreme Court can be interpreted as a realistic approach: starting from the internal needs of judicial education, growing gradually, then opening up opportunities to become an example for the national legal education system. This change is not merely following technological trends, but is part of a broader agenda to strengthen legitimacy and improve the quality of education for prospective judges in facing the challenges of the digital judicial era. This approach reflects a proportional legal policy design, where technological innovation is integrated through appropriate legal instruments without exceeding the normative scope of judicial regulation.

Conclusion

This study reveals that the conventional trial simulation method currently employed in the education of aspiring judges still faces limitations, particularly in terms of space, time, and the limited integration of digital technology. As a result, there is a gap between what is taught through trial simulations and the competencies that judges actually need in the digital age. The metaverse could be one solution to fill this gap. In an immersive virtual space, prospective judges can practise dealing with situations that closely resemble real-life scenarios, from managing electronic evidence to resolving technical issues when trials are conducted online. Such training provides them with a more adaptive experience, while still being grounded in the principles of justice that are at the heart of the judicial system. Integrating the Metaverse into the education of prospective judges cannot be done without a clear legal basis. As a first step, the Supreme Court can use internal policy instruments to conduct limited trials. From there, the results can be

reviewed periodically before finally being formulated into more binding regulations. In addition, curriculum updates at the Judicial Education and Training Agency are also important, so that Metaverse-based scenarios are truly incorporated into the official learning path, rather than just temporary experiments.

This study has several limitations that require consideration. First, the empirical data used were obtained from a limited number of informants, primarily young judges and those involved in judicial candidate training. Therefore, it does not fully represent diverse perspectives within the broader judicial environment. Second, because the data were obtained through qualitative interviews, there is a possibility of subjective bias from informants in describing existing institutional practices. Third, this study did not examine in-depth technical readiness aspects, such as the availability of devices and network infrastructure, which could impact the implementation of Metaverse-based simulations. Therefore, the findings of this study need to be understood within a specific institutional context and cannot be broadly generalized to the entire legal education system. Further research is recommended to expand the scope of empirical data by involving more stakeholders, as well as further examining the technical and pedagogical aspects of implementing immersive technology in legal education.

This study argues that the Supreme Court would benefit from introducing policy instruments step by step. Initial pilot regulations at the administrative level could serve as a testing ground, and, if they prove effective, stronger regulations could follow. At the curricular level, the use of the Metaverse should not be treated as a replacement for conventional training, but as a complementary tool. Framed this way, the initiative opens space for innovation in legal education that addresses practical demands while preserving its legitimacy and sustainability within Indonesia's system of justice.

Acknowledgments

The authors would like to express their deepest gratitude to the Ministry of Higher Education, Science, and Technology for funding this fundamental research. In addition, the author also expresses his gratitude to the law study program, the informatics study program and the Institute for Research and Community Service of the University of Muhammadiyah Malang for supporting the implementation of this research.

References

- Afzal, Jamil. "Future of Legal Tools and Justice." In *Implementation of Digital Law as a Legal Tool in the Current Digital Era*, by Jamil Afzal. Springer Nature Singapore, 2024. https://doi.org/10.1007/978-981-97-7106-6_8.
- Ahmad Saifulloh, Putra Perdana, Muwaffiq Jufri, Firdaus Arifin, Zico Junius Fernando, and Dhita Widya Putri. "Legal Policy on Sports Qualifications in Indonesia: Constitutional Implications of Constitutional Court Decision No. 52/PUU-IX/2011." *International Journal of Constitutional and Administrative Law*, March 11, 2026, 54–74. <https://doi.org/10.66502/rct6q772>.
- Ahmad, Shoyaib, and Raj Kumar. "Transforming Legal Education in India: The Role of Clinical Legal Education and Trial Advocacy." Preprint, Law, May 14, 2025. <https://doi.org/10.33774/coe-2025-12ncq>.

- Ahmed, Rozha Kamal, Khder Hassan Muhammed, Ingrid Pappel, and Dirk Draheim. "Impact of E-Court Systems Implementation: A Case Study." *Transforming Government: People, Process and Policy* 15, no. 1 (2021): 108–28. <https://doi.org/10.1108/TG-01-2020-0008>.
- Aksoy, Pınar Çağlayan. "Legal Services and the Metaverse." In *Research Handbook on the Metaverse and Law*, edited by Larry A. DiMatteo and Michel Cannarsa. Edward Elgar Publishing, 2024. <https://doi.org/10.4337/9781035324866.00022>.
- Alabi, Raliat. "Legal Research without Barriers: Free Legal Databases as Alternatives for Law Students." *International Journal of Legal Information* 53, no. 2 (2025): 148–54. <https://doi.org/10.1017/jli.2025.10065>.
- Alamri, Muthi'ah. "Constitutional Courts and the Protection of Constitutional Rights: A Comparative Analysis of Institutional Authority in Indonesia and Morocco." *International Journal of Constitutional and Administrative Law*, September 30, 2025, 116–30. <https://doi.org/10.66502/0wcva437>.
- Alberthine, Jeannetha. *Transformasi Peran Regulator Dan Adjudikator Dalam Era Digital: Menanggapi Tantangan Dan Peluang Baru*. 7, no. 1 (2024): 346–55. <https://doi.org/https://doi.org/10.56301/csj.v7i1.1489>.
- Anupam, Kumar Waseem, and Sharma Akhil. *Transforming Access to Justice in the Digital Age: The Role of E-Courts*. 8 (2023): 43.
- Aprilinda, Dias Rizki. "Mitigating Discrimination and Privacy Threats in Algorithmic Pricing through Personal Data Protection Law in Indonesia." *Estudiante Law Journal* 7, no. 3 (2025). <https://doi.org/10.33756/eslaj.v7i3.32879>.
- Bandes, Susan A., and Neal Feigenson. *Virtual Trials: Necessity, Invention, and the Evolution of the Courtroom*. 68 (2020): 1275.
- Bandung Law College, Netty S. R. Naiborhu, Dekie Gg Kasenda, and Tambun Bungai Palangka Raya College of Law. "Environmental Law Enforcement Through State Administrative Legal Instruments in Environmental Cases in Indonesia." *JOURNAL OF SUSTAINABILITY SCIENCE AND MANAGEMENT* 19, no. 1 (2024): 138–53. <https://doi.org/10.46754/jssm.2024.01.012>.
- Chang, Yun-Chien, and Peng-Hsiang Wang. "Empirical Foundation of Normative Arguments in Legal Reasoning." *European Journal of Empirical Legal Studies* 1, no. 1 (2024): 69–88. <https://doi.org/10.62355/ejels.18070>.
- D. Matona, Marshanda Adella, Weny Almoravid Dunga, and Nurul Fazri Elfikri. "Juridical Review Of Fine Art Works Created Using Artificial Intelligence Technology Art Generator." *Estudiante Law Journal* 7, no. 3 (2025): 722–40. <https://doi.org/10.33756/eslaj.v7i3.31295>.
- Ehirim, Nwanneka Flora, and Ugochukwu Ehirim. *Nigerian Children's Right to Be Left Alone on the Metaverse: A Comparative Analysis*. 19, no. 1 (2026): 19–45. <https://doi.org/10.33756/jelta.v19i1.37909>.
- Goswami, Dr Parineeta, and Aarushi Goswami. "Virtual Justice: The Role of Technology in Transforming Criminal Administration." *SSRN Electronic Journal*, ahead of print, 2025. <https://doi.org/10.2139/ssrn.5121477>.
- Haotian Li, and Juan Xu. *The Application of Virtual Simulation Technology in Law Teaching Practice BT - Emerging Technologies for Education*. Edited by Weijia Jia. Springer International Publishing, 2021.
- Hidayah, Nur Putri, Galih Wasis Wicaksono, Amiludin Amiludin, et al. "Metaverse as the Solution to the Absence of a Constitutional Court Moot Courtroom in Universities." *Jurnal Pengabdian Hukum Indonesia (Indonesian Journal of Legal Community*

- Engagement*) *JPHI* 7, no. 2 (2024): 213–40. <https://doi.org/10.15294/jphi.v7i2.2477>.
- Hidayah, Nur Putri, Galih Wasis Wicaksono, Faisal, and Ismail Koto. “Metaverse Ruang Sidang Semu Mahkamah Konstitusi: Transformasi Digital Pendidikan Hukum Di Fakultas Hukum Universitas Muhammadiyah Sumatera Utara: Metaverse of the Constitutional Court’s Courtroom: Digital Transformation of Legal Education at the Faculty of Law, University of Muhammadiyah North Sumatra.” *Jurnal Dedikasi Hukum* 5, no. 1 (2025): 36–48. <https://doi.org/10.22219/jdh.v5i1.39554>.
- Hidayah, Nur Putri, Galih Wasis Wicaksono, Muhammad Ilham Perdana, Ahmad Faiz, and - Cholidah. “Implementation of Virtual Reality Moot Court for Simulation and Procedural Law Learning of the Constitutional Court.” *JOIV: International Journal on Informatics Visualization* 8, no. 4 (2024): 2444. <https://doi.org/10.62527/joiv.8.4.3125>.
- Joni Laksito and Agus Wibowo. “Mengubah Budaya Pendidikan Hukum Menggunakan Pembelajaran Simulasi Metaverse.” *JURNAL HUKUM, POLITIK DAN ILMU SOSIAL* 1, no. 2 (2023): 95–117. <https://doi.org/10.55606/jhpis.v1i2.1532>.
- Khan, Asif and Muhammad Abid Hussain Shah Jiliani. “Expanding the Boundaries of Jurisprudence in the Era of Technological Advancements.” *IJUM Law Journal* 31, no. 2 (2023): 393–426. <https://doi.org/10.31436/ijumlj.v31i2.856>.
- Khatimah, Husnul. “E-Judiciary: Keabsahan Pemeriksaan Saksi Virtual Dalam Sistem Peradilan Modern.” *Indonesian Journal of Islamic Jurisprudence, Economic and Legal Theory* 2, no. 4 (2024): 2173–84. <https://doi.org/10.62976/ijijel.v2i4.810>.
- Li, Zhi, and Wenxiang Zhang. “Technology in Education: Addressing Legal and Governance Challenges in the Digital Era.” *Education and Information Technologies* 30, no. 7 (2025): 8413–43. <https://doi.org/10.1007/s10639-024-13036-9>.
- McGrath, James, and Andrew P. Morriss. *Online Legal Education & Access to Legal Education & the Legal System*. 70 (2020): 49.
- Palkova, Karina, and Elena Agapova. “Legal Tech in Legal Education: Global Perspectives and Challenges from the Latvian - Ukrainian Experience.” *SOCIETY. INTEGRATION. EDUCATION. Proceedings of the International Scientific Conference* 5 (May 2021): 414–25. <https://doi.org/10.17770/sie2021vol5.6166>.
- Rasiwan, H. Iwan. *Dinamika Sistem Peradilan Pidana Indonesia*. Raja Grafindo, 2025.
- Rombe, Erica Natalia, and Amir Ilyas. *Social Media-Based Triangular Fraud and Cyber Law Enforcement: An Indonesian Transnational Digital Crime Perspective*. 19, no. 1 (2026): 62–81.
- Rossner, Meredith, and David Tait. *Virtual Technology and the Changing Rituals of Courtroom Justice*. 98 (2023): 251.
- Satiadharmanto, Deddi Fasmadhy, Yuda Widodo, and Rifka Safira. *Fakultas Hukum Di Indonesia: Perubahan Dan Penyesuaian Dalam Menyongsong Revolusi Industri 5.0 Dengan Perspektif Pemikiran Islam*. 2, no. 1 (2024): 45–62.
- Setiawati, Diana, Ibrahim Sholahudin, Nur Isa Herda A, Harjuna Nurfattah, Nilam Arum Sari, and Sabrina Diyang A.P. “Transformasi Teknologi Dalam Hukum Dagang Internasional: Regulasi Dan Penyelesaian Sengketa Di Era Digital.” *Borobudur Law and Society Journal* 2, no. 5 (2023): 220–31. <https://doi.org/10.31603/10891>.
- Singh, Vidhi, and Raj Kumar Yadav. “Transforming Legal Education: The Role of Clinical Legal Education in Bridging Theory and Practice.” Preprint, SSRN, 2025. <https://doi.org/10.2139/ssrn.5244915>.

- Smith, Marcus. "Integrating Technology in Contemporary Legal Education." *The Law Teacher* 54, no. 2 (2020): 209–21. <https://doi.org/10.1080/03069400.2019.1643647>.
- STIKES Yahya Bima. *Integrasi Ilmu Hukum Dan Teknologi Etika Dan Regulasi Dalam Era Digital*. 2025.
- Tang, Lang. "The Effective Application of 'Moot Court' in Law Teaching." *2021 2nd International Conference on Computers, Information Processing and Advanced Education*, May 25, 2021, 240–43. <https://doi.org/10.1145/3456887.3456940>.
- Vargas-Murillo, Alfonso Renato, Rafael Fortunato Supo Hallasi, Carlos Alberto Cueva Quispe, and Enlil Iván Herrera Pérez. "The Integration of Digital Technologies in Legal Education: A Systematic Review of Trends and Challenges." *2024 IEEE 4th International Conference on Advanced Learning Technologies on Education & Research (ICALTER)*, December 10, 2024, 1–4. <https://doi.org/10.1109/ICALTER65499.2024.10819212>.
- Voskobitova, M. R. "Online Simulations for Teaching Professional Legal Skills." *Kutafin Law Review* 8, no. 4 (2021): 519–45. <https://doi.org/10.17803/2313-5395.2021.4.18.519-545>.
- Zafar, Ammar. "Balancing the Scale: Navigating Ethical and Practical Challenges of Artificial Intelligence (AI) Integration in Legal Practices." *Discover Artificial Intelligence* 4, no. 1 (2024): 27. <https://doi.org/10.1007/s44163-024-00121-8>.