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Integrating AI Moot Court into the Teaching of Foreign-related Economic Law in the Hainan Free Trade Port from the Perspective of Practical Competence Improvement

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Abstract: *With the deepening opening-up of the Hainan Free Trade Port (HFTP), foreign-related industries such as cross-border trade and foreign investment have developed rapidly. New foreign-related economic disputes and compliance risks keep emerging, creating an urgent market demand for versatile and practice-oriented foreign-related legal talents. The teaching of Foreign-related Economic Law (FREL) in local universities has long prioritized theory over practice. Constrained by venue, case resources and time, traditional moot courts fail to adapt to the practical scenarios unique to HFTP, leading to a disconnect between talent training and job requirements. Centered on improving practical competence, this paper analyzes the pain points in current FREL teaching and the adaptability of the Artificial Intelligence-based Moot Court (AI Moot Court) in light of HFTP's foreign-related legal development needs. It constructs an AI Moot Court teaching system tailored to HFTP's characteristics, and designs a tiered training process, supporting resource mechanisms and a multi-dimensional assessment framework. The findings show that AI Moot Court can break through the limitations of traditional teaching, dynamically adapt to new foreign-related legal scenarios in HFTP, and effectively enhance students' practical foreign-related legal skills. This study provides references for the digital teaching reform of foreign-related law in local universities and the cultivation of legal talents in HFTP.*

Keywords: *Hainan Free Trade Port; Foreign-related Economic Law; AI Moot Court; Practical Competence; Teaching Reform*

1. Introduction

As a core gateway for China's opening-up, the Hainan Free Trade Port (HFTP) has advanced its customs closure operation, driving rapid growth in cross-border trade, foreign investment, offshore finance and other foreign-related businesses [1]. This has made regional foreign-related economic legal relations increasingly diverse and complex. New types of foreign-related economic disputes and cross-border compliance risks keep emerging, raising market demand for versatile foreign-related legal talents with practical capabilities, and setting higher standards for the teaching quality of Foreign-related Economic Law (FREL) in local universities.

As a core course for law and economics majors in Hainan universities, FREL plays a key role in nurturing practice-oriented foreign-related legal talents aligned with HFTP's development. For a long time, this course has focused heavily on theoretical lectures while neglecting practical training. Traditional offline moot courts are constrained by venue, time, case resources and faculty capacity, failing to cover new foreign-related legal scenarios unique to HFTP. This has resulted in a common gap: students grasp solid theoretical knowledge but lack practical skills, creating a clear disconnect between university training and the actual job demands of HFTP.

Amid the digital reform of liberal arts education, artificial intelligence (AI) has gradually permeated practical legal education. The Artificial Intelligence-based Moot Court (AI Moot Court), supported by big data and virtual simulation technologies, can dynamically adapt to new regional legal practices and establish a regular, scenario-based practical training platform. It thus offers a new solution to address the bottlenecks in FREL practical teaching.

Existing studies have extensively explored AI-enabled legal education and moot court reform, verifying the role of digital technology in enhancing practical legal training. However, most research

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focuses on general law courses, with limited attention to integrating digital tools into FREL teaching tailored to HFTP's regional characteristics. There is a lack of practical teaching frameworks aligned with local talent development needs.

Against this backdrop, this paper centers on the core goal of improving practical competence. It explores the value of integrating AI Moot Court into FREL teaching in light of HFTP's foreign-related economic and legal features. It also designs a comprehensive teaching framework, implementation process and supporting mechanisms, aiming to optimize practical teaching models for regional FREL education, enhance students' practical foreign-related legal skills, and provide teaching references for cultivating foreign-related legal talents in HFTP.

2. Current Status of FREL Teaching in HFTP and Adaptability of Integrating AI Moot Court

2.1 Core Positioning of FREL Courses in HFTP

Distinct from general economic law courses in other universities, FREL in HFTP bears distinct regional, foreign-related and practical attributes. Its curriculum is closely aligned with HFTP's opening-up strategy and the development of a law-based business environment.

The course requires students not only to master foundational theories of foreign investment, cross-border trade, customs taxation and international economic and trade rules, but also to develop practical skills in resolving really foreign-related legal issues. Rooted in HFTP's special policies such as zero tariffs, relaxed market access and open cross-border service trade, the course closely connects with local mainstream industries including cross-border e-commerce, offshore trade and foreign investment cooperation. It prioritizes cultivating practical capabilities in foreign-related dispute resolution, cross-border compliance management and foreign-related legal document drafting, aiming to train application-oriented, versatile foreign-related legal talents tailored to HFTP's development [2].

2.2 Core Problems in Current FREL Practical Teaching

Reflecting on teaching practices in local Hainan universities and feedback from enterprises, FREL practical teaching still faces notable shortcomings that hinder alignment with regional talent needs.

The overall teaching model remains traditional, with classes centered on statutory interpretation, theoretical analysis and classic case studies. Course content updates slowly, with insufficient coverage of new foreign-related economic disputes and compliance scenarios emerging during HFTP's customs closure. This creates a disconnect between theoretical teaching and real regional practices, leaving students unable to apply knowledge to solve actual foreign-related legal problems.

Traditional moot courts also show clear limitations in practical training. Offline training relies on fixed venues and faculty, with low frequency and limited student participation, making regular full-student training unfeasible. Meanwhile, traditional training cases are mostly generic foreign-related ones, lacking specialized cases reflecting HFTP's industrial characteristics. This weakens the relevance of practical training, as scenarios rarely match on-the-job requirements in HFTP.

The course assessment system also needs improvement. Currently, grades rely heavily on final written exams and coursework, with assessment focused on memorization and understanding of theories. There are no sound standards for evaluating practical capabilities such as courtroom performance, case analysis and document drafting. This single assessment approach discourages students from proactively improving practical skills.

2.3 Adaptability and Educational Advantages of Integrating AI Moot Court

As a digital practical legal training tool, AI Moot Court is highly compatible with FREL practical teaching in HFTP, effectively addressing the shortcomings of traditional models and aligning closely with the course's practical training goals.

Leveraging big data, the AI platform integrates real-time judicial precedents, foreign-related economic and trade policies and regulatory rules specific to HFTP. It dynamically generates training cases tailored to local industries, covering cross-border tariff disputes, foreign investment conflicts and cross-border e-commerce compliance risks. This resolves the issues of outdated cases and monotonous scenarios in traditional teaching, ensuring practical training directly reflects on-the-job demands in HFTP.

Digital training eliminates the time and space constraints of traditional practical teaching. The

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online platform operates 24/7, allowing students to conduct repeated training at their own pace. It enables inclusive, personalized practical exercises for all students, compensating for limited offline sessions and low participation, and supporting consistent skill development in foreign-related legal practice.

Furthermore, AI Moot Court delivers end-to-end training in foreign-related legal practice, covering case analysis, legal research, document drafting, courtroom debate and risk assessment. This forms a complete training loop to comprehensively refine students' practical foreign-related legal capabilities. The platform's built-in data analytics accurately identifies individual training gaps, providing data-driven insights for targeted teaching and personalized learning. It drives a shift in the course focus from theoretical lectures to practical competence development.

2.4 Practical Challenges in Integrating AI Moot Courts into Teaching

Despite the high compatibility between AI moot courts and the teaching of foreign-related economic law in Hainan Free Trade Port, a host of practical hurdles in terms of regional resources, technical application, teachers' and students' understanding as well as teaching integration still stand in the way of the large-scale rollout of this digital training model.

First of all, it is quite difficult to build a localized intelligent case database. As the closure and operation of Hainan Free Trade Port forge ahead steadily, emerging business forms including cross-border finance, offshore trade and international shipping keep popping up. Relevant foreign-related economic disputes feature novel case backgrounds, complicated legal relations and highly time-sensitive policies. Currently, publicly accessible judicial documents and dispute cases are rather limited. Besides, many cases involving special policies of the free trade port cannot be directly adopted for teaching training due to data desensitization and confidentiality requirements. What's more, to enable the AI algorithm to generate simulated cases intelligently and classify them by difficulty levels, technical teams need to conduct in-depth algorithm debugging in combination with exclusive laws and regulations as well as local supervisory rules of Hainan Free Trade Port. Simply applying the database of general legal training platforms fails to reflect the local characteristics of teaching. The localization transformation of cases is time-consuming and requires solid technical expertise.

Secondly, teachers and students are not fully competent in using digital training tools. On one hand, quite a number of teachers have long adopted the traditional lecture-based teaching method. They are not proficient in operating the AI moot court platform, analyzing relevant data or offering targeted guidance during training. As a result, the educational potential of intelligent training platforms cannot be fully tapped. On the other hand, some students are used to passive classroom learning. They lack the initiative to explore and practice repeatedly when carrying out self-directed and immersive online training on AI platforms, and merely treat training as a routine task, which makes it hard for them to substantially improve their practical capabilities.

Thirdly, the connection between online and offline teaching is inadequate. After introducing AI moot courts, some universities suffer from disconnection between digital technology and in-class teaching. They fail to combine AI training content with in-class theoretical knowledge, offline Q&A sessions and physical moot court activities. In some courses, AI training is arranged as an after-class task without targeted explanation and review in class. This splits theoretical learning, online training and offline practice apart, making it impossible to form an integrated teaching loop.

Finally, the operation and maintenance of platforms bring prominent financial pressure. The construction, function iteration, server maintenance and regular data update of dedicated AI training platforms all demand steady funding and professional technical support. Local universities generally have limited special funds for teaching, so they struggle to maintain digital training platforms in the long run. In addition, the inter-departmental cooperation mechanism remains imperfect. Poor communication among law majors, information technology departments and off-campus practical institutions often leads to delayed function updates and untimely import of practical resources on the platform. Only by addressing the above challenges can we clear obstacles for the implementation of the subsequent implementation plans and guarantee mechanisms.

3. Design of AI Moot Court Integration Framework Oriented to Practical Competence Improvement

3.1 Core Principles for Designing the AI Moot Court Teaching Framework

Guided by HFTP's talent development goals and legal education principles, the AI Moot Court

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teaching framework follows four core principles to ensure integration is scientific and practical.

The framework is fully tailored to HFTP's development characteristics, with all training content, case selection and competence objectives designed around local foreign-related economic industries. It avoids generic, homogenized content, ensuring training outcomes directly meet the needs of foreign-related legal positions in the region. Teaching emphasizes deep integration of theory and practice, embedding core theoretical knowledge into every stage of training. This allows students to deepen theoretical understanding through hands-on practice, bridging the theory-practice gap in traditional teaching [3].

Training adopts a progressive, tiered structure, with graded exercises designed to match students' evolving knowledge and cognitive abilities. Difficulty increases gradually to align with students' skill development trajectories. Leveraging AI capabilities, digital precision education is implemented, with training data identifying specific competence gaps to tailor teaching content and training plans, enhancing the accuracy and effectiveness of practical teaching.

3.2 Core Teaching Modules of AI Moot Court for FREL

Based on key FREL content and on-the-job practical demands in HFTP, four specialized teaching modules are built on the AI Moot Court platform, forming a systematic, scenario-based practical teaching system.

The intelligent case deduction module draws on a database of local foreign-related economic disputes to generate tiered HFTP-specific mock cases. It guides students to analyze legal relationships, define dispute focuses and assess applicable rules, strengthening their ability to analyze new foreign-related legal issues.

The cross-border document training module focuses on high-frequency foreign-related legal documents in HFTP, including complaints, pleadings, compliance opinions and cross-border contracts. AI-powered error correction, standardized feedback and template comparison help students master drafting norms and professional logic, laying a solid foundation for document practice.

The full-process courtroom simulation module replicates the complete proceedings of foreign-related economic dispute trials, supporting multi-role online adversarial training. It fully reproduces core stages such as court investigation, evidence presentation and debate, with real-time performance recording and feedback to enhance students' courtroom expression and critical thinking [4].

The compliance risk assessment module simulates legal risks in foreign investment and import/export trade for enterprises operating across borders in HFTP. It guides students to identify risks and design compliance prevention plans, aligning with current demand for foreign-related compliance professionals in HFTP enterprises.

3.3 Comparison between Traditional Teaching and AI Moot Court-Integrated Teaching

To highlight the advantages of digital teaching reform and the unique value of AI Moot Court in practical competence development and regional scenario adaptation, this section compares traditional and AI-integrated teaching models across multiple dimensions (Table 1).

Table 1 Comparison between Traditional FREL Teaching and AI Moot Court-Integrated Teaching in HFTP

Comparison Dimension	**Traditional FREL Teaching Model**	**AI Moot Court-Integrated Teaching Model**
Teaching Scenarios	Classroom lectures dominate; limited practical scenarios; insufficient coverage of new HFTP foreign-related cases; generic, homogenized scenarios	AI dynamically generates realistic, updated cases covering cross-border trade, foreign investment and tariff disputes specific to HFTP; rich, industry-aligned scenarios
Training Frequency & Access	Limited offline moot court sessions; constrained by venue, personnel and time; few training opportunities for students	24/7 online access; no time/space limits; repeated immersive training for frequent, inclusive practice
Competence Focus	Emphasis on statutory memorization and theoretical understanding; neglect of practical foreign-related skills, cross-border critical thinking and compliance assessment	Focus on practical competence improvement; comprehensive training in document drafting, courtroom practice, dispute resolution and cross-border risk assessment
Assessment Methods	Written exams, coursework and essays dominate; single evaluation; no quantitative standards for practical competence	AI quantitative scoring + faculty assessment + peer review; full-process practical performance coverage; multi-dimensional quantitative evaluation system
HFTP Alignment	Slow content updates; poor adaptation to new foreign-related legal practices, rules and disputes in HFTP	Real-time alignment with latest foreign-related economic and trade policies and legal rules in HFTP; precise adaptation to regional talent and industrial needs

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4. Implementation Path and Supporting Mechanisms for Integrating AI Moot Court into FREL Teaching

4.1 Tiered Progressive Implementation Process for AI Moot Court Teaching

Aligned with course progress and students' skill development, a tiered AI training process is designed to embed digital practical exercises throughout the course, ensuring steady competence growth.

Basic training is introduced at the course's initial stage, focusing on applying foundational theories. Students complete statutory research, basic document drafting and simple case analysis via the platform. This familiarizes them with core foreign-related legal norms in HFTP and platform operations, building a bridge between theory and practice.

Specialized modular training follows mid-course, aligned with core knowledge points. The AI platform matches scenarios for cross-border e-commerce, customs administration and foreign investment, enabling targeted exercises. This prioritizes individual practical skills, addressing key practical challenges in the course.

Comprehensive practical training is conducted in the final stage, with AI generating complex foreign-related economic cases involving multiple parties and dispute points. Students work in groups to complete end-to-end exercises from case analysis and document drafting to courtroom debate and compliance solution design. This integrates knowledge holistically, enhancing comprehensive practical skills and teamwork.

4.2 Development Path for Teaching Hardware and Software Resources

Sustained integration of AI Moot Court teaching requires robust hardware, software, case and faculty resources to maintain teaching quality.

Universities can build a dedicated AI Moot Court training platform tailored to FREL as part of smart campus development. Key features such as foreign-related case generation, document feedback and courtroom scoring are optimized, supported by online training terminals and smart classrooms to enable hybrid online-offline practical teaching.

Collaborating with local courts, foreign-related law firms, HFTP administrative committees and foreign trade enterprises, universities collect real local foreign-related economic dispute cases to build a dynamically updated HFTP-specific case library. Cases are graded and adapted for tiered training to align with teaching needs [5].

Faculty capacity development is also prioritized through digital teaching training and foreign-related practical workshops. This enhances instructors' AI teaching proficiency and practical expertise in HFTP law. Local foreign-related legal experts and senior lawyers are invited as external trainers to form a dual-teacher team, ensuring training is professionally rigorous and practice-oriented.

4.3 Optimization of Practice-Oriented Multi-Dimensional Teaching Assessment

To address the limitations of traditional theory-focused assessment, a multi-dimensional evaluation system tailored to AI training is established, centering on practical competence.

Leveraging the AI platform's big data capabilities, full-process quantitative assessment tracks training duration, case analysis accuracy, document standardization and courtroom performance. Objective scores accurately reflect students' practical skills.

Faculty evaluation and expert feedback complement AI scoring, assessing students' logical reasoning, problem-solving and professional rigor during training. This mitigates the limitations of automated assessment, enhancing comprehensiveness and professionalism.

Peer review and self-reflection are integrated, encouraging collaborative learning in group training and independent gap analysis through self-review. Multi-dimensional results are weighted into final grades, with increased emphasis on practical assessment, shifting the focus toward practical competence.

5. Conclusion and Outlook

Centered on practical competence improvement, this paper addresses the limitations of traditional

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FREL teaching in HFTP and systematically explores the integration of AI Moot Court as a digital training model. By analyzing current teaching practices and AI adaptability, it develops a specialized teaching framework aligned with HFTP's characteristics, alongside a tiered training process, resource support system and multi-dimensional assessment mechanism. The result is a practical teaching reform model tailored to local universities in HFTP.

The study confirms that AI Moot Court effectively overcomes the time, space and assessment limitations of traditional practical teaching. It aligns closely with new foreign-related legal training scenarios in HFTP, enhancing students' practical foreign-related legal skills and bridging university training with regional industrial needs. It offers valuable insights for digital reform of foreign-related legal education in local universities.

Limitations remain: the long-term impact of AI training requires further empirical validation, and some modules can be refined for better scenario alignment. Future research will update training cases and optimize modules to reflect new foreign-related legal scenarios post-HFTP customs closure. Expanding the model to related foreign-related law courses will strengthen the training of versatile foreign-related legal talents, supporting the development of a law-based business environment in HFTP.

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