

Reform Path of International Business Practice Experimental Teaching: Exploration Based on Single Window Simulation Experiment

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Abstract

In the context of digital teaching, international trade practice experimental teaching is facing unprecedented challenges. The traditional experimental teaching mode is either limited to explaining cases according to chapters or spending a long time on enterprise internships. On the basis of virtual simulation software, we used information technology to simulate the entire process of the single window trade mode promoted in China in recent years, implemented experimental teaching reforms, and achieved excellent results, improving the practical skills of international trade majors. In the future, we will continue to improve this experimental project and launch digital teaching materials that match it as soon as possible to meet the requirements of the new situation of international trade experimental teaching.

Keywords

International trade practice experimental teaching, Education reform, Digital empowerment, Highly skilled talents.

1. Introduction

Currently, driven by the wave of digitization, the discipline of International Trade Practice is undergoing profound changes. Students are not only required to master fundamental knowledge points such as trade terms and settlement methods but also need to possess the ability to prepare documentation in the context of symbolic delivery. Experimental teaching, serving as a vital bridge for students to transform theoretical knowledge into practical work skills, has increasingly highlighted its crucial role in the context of digital empowerment. Universities have attached great importance to this and are actively exploring ways to enhance experimental teaching in terms of digital empowerment.

2. Current Status of Experimental Teaching in International Trade Practice at Universities

International Trade Practice, as the core curriculum of the International Trade major, is crucial and irreplaceable. The objective of this course is to fully equip students with practical operational skills in international trade, enabling them to competently navigate various complex trade environments and challenges in their future careers. However, numerous shortcomings have been exposed in the process of experimental teaching, which urgently require in-depth exploration and active promotion of improvement efforts.

Firstly, there is a lack of dual-qualified teachers. In terms of the actual situation of the experimental teaching faculty in International Trade Practice, there is a widespread shortage of dual-qualified teachers within the faculty of universities. Dual-qualified teachers refer to

those who possess both solid theoretical teaching abilities and extensive practical operational experience. However, the current situation is that most teachers often only possess the corresponding abilities in the former aspect, while there is a significant lack in the latter. This status quo directly leads to difficulties in advancing experimental teaching in-depth and achieving the key goal of enhancing students' practical operational abilities. To effectively address this issue, we must vigorously strengthen the construction of the experimental teaching faculty and attach great importance to the cultivation of teachers' practical operational experience. This can be achieved by organizing teachers to actively participate in practical activities related to International Trade Practice or sincerely inviting industry experts with rich practical operational experience to conduct professional lectures and systematic training at the university, thereby effectively enhancing teachers' practical operational abilities.

Secondly, the practical teaching system needs to be improved and optimized. From the current situation of the experimental teaching training programs, some universities have extremely obvious deficiencies in the experimental teaching of International Trade Practice courses. Some universities lack sufficient experimental components in their course settings, or even if experimental components are included, their design is too simple and superficial, failing to truly achieve the fundamental goal of enhancing students' practical operational abilities. To improve this situation, we need to comprehensively optimize the experimental teaching training programs. More challenging experimental content should be carefully designed to further increase the simulation degree and difficulty coefficient of the experiments, so that they can better simulate the actual operational processes of International Trade Practice. Additionally, diversified teaching methods such as case analysis and role-playing can be actively introduced to fully stimulate students' learning interest and enthusiasm, and enhance their initiative in participating in experimental teaching.

Furthermore, the functionality of the experimental platform needs to be enhanced. Considering the current state of experimental platforms, which serve as crucial vehicles for experimental teaching, numerous significant issues are present in the international trade practice platforms of some universities. Some platforms are overly simplistic in functionality, catering solely to basic experimental operational needs and unable to meet the demands of complex and ever-changing international trade practices. Simultaneously, the operational processes of some platforms are cumbersome and trivial, making it difficult for students to quickly become proficient, thereby significantly impacting the practical effectiveness of experimental teaching. To effectively address these issues, we must vigorously improve the functionality and operability of the experimental platforms. On one hand, efforts should be fully directed towards strengthening the research, development, and upgrading of the experimental platforms, actively incorporating more functional modules to meet the demands of complex and changing international trade practices. On the other hand, the operational processes of the experimental platforms should be simplified to reduce the barriers for students, enabling them to quickly grasp and proficiently use the platforms.

Lastly, the development of experimental textbooks needs to be accelerated. Analyzing the current state of experimental textbooks, which are the foundation of experimental teaching, it is evident that there is a widespread lack of high-quality, highly integrated textbooks for international trade practice experiments. Most existing experimental textbooks are primarily guides or theoretical textbooks, severely lacking experimental content that is closely integrated with practical operations. This makes it difficult for students to effectively integrate theoretical knowledge with practical operations during the experimental process, thereby having a significant negative impact on the effectiveness of experimental teaching. To improve this unfavorable situation, we need to vigorously strengthen the development of experimental textbooks. On one hand, more highly integrated experimental textbooks should be actively introduced, combining theoretical knowledge with practical operations so that students can

deeply understand and firmly grasp the operational skills of international trade practice during the experimental process. On the other hand, the content of experimental textbooks should be updated in a timely manner, closely following the latest developments in the field of international trade, to ensure the timeliness and forward-looking nature of experimental teaching.

In summary, there are numerous issues in the digital empowerment of international trade practice experimental teaching in universities, which require in-depth and detailed analysis. To effectively improve this situation, we should simultaneously address multiple key aspects, including the experimental teaching faculty, experimental teaching curricula, experimental platforms, and experimental textbooks. Comprehensive strengthening and continuous improvement should be carried out in these areas to fully enhance students' practical operation skills and knowledge of international trade practices. This will lay a solid foundation for the growth of highly skilled talents and help them shine in their future career development.

3. Future Development Trends of Experimental Teaching in International Trade Practice

With the constant changes in the international trade landscape and the deepening advancement of teaching reforms in international trade practice at universities, against the backdrop of digital empowerment, the cultivation of high-skilled talents has placed higher demands on experimental teaching in international trade practice. Experimental teaching is exhibiting the following trends:

3.1. Transition from unilateral to bilateral experimental teaching

In future international trade practice teaching, we will witness a profound transformation: a shift from unilateral teaching to bilateral interaction ^[1]. The core of this transformation lies in enhancing deep communication and feedback between teachers and students. Traditional experimental teaching often places the teacher in a dominant role, with students passively receiving knowledge. However, with the updating of educational concepts and the improvement of teaching methods, future experimental teaching will place greater emphasis on student participation and initiative. Teachers can cultivate students' abilities to think independently and solve problems by guiding them to participate in experimental design, data analysis, and result discussion. At the same time, students can also put forward their own insights and suggestions based on their interests and needs, engaging in in-depth exchanges and discussions with teachers. This teaching approach, characterized by bilateral feedback and dynamic adjustment, not only stimulates students' interest and enthusiasm in learning but also enhances teaching effectiveness and quality.

3.2. Integration of experimental content from fragmentation to a single window

Traditional experimental teaching in international trade practice often adopts methods such as chapter-based experiments or simulation experiments. Although these methods can help students understand and grasp individual knowledge points, they struggle to form a complete experimental system. To address this issue, future experimental teaching will place greater emphasis on holism and integration. Specifically, the experimental teaching platform will adopt a single-window design, organically integrating and efficiently managing various experimental steps and content. Through this window, students can conveniently access experimental materials, conduct experiments, and submit experimental reports. Additionally, the experimental teaching platform will provide abundant experimental resources and cases to help students better understand and apply what they have learned.

3.3. Deepening from verification experiments to curriculum design research

Experimental teaching is not merely a means to verify theoretical knowledge; it is also a crucial pathway to cultivate students' practical abilities and innovative spirits. Therefore, future experimental teaching in international trade practice will place greater emphasis on curriculum design research. The core of curriculum design research lies in devising challenging and innovative experimental projects. These projects should be closely aligned with practical issues in the field of international trade practice, capable of guiding students to delve deeply into and resolve problems. Additionally, curriculum design should also emphasize fostering students' teamwork abilities and sense of innovation, enabling them to continuously enhance their overall qualities in the process of solving problems.

3.4. Innovation in experimental teaching from single-discipline to interdisciplinary approaches

As a comprehensive discipline, international trade practice has a broad research field and covers a wide range of contents, requiring deep integration with other related majors. Future experimental teaching will place greater emphasis on interdisciplinary collaboration and resource integration, broadening students' horizons and perspectives by introducing knowledge and methods from other disciplines [2]. Experimental teaching can be integrated with other disciplines such as economics, management, and law to jointly design experimental projects and teaching content. This not only enriches the connotation and extension of experimental teaching but also helps students better understand the complexity and diversity of the field of international trade practice. At the same time, interdisciplinary experimental teaching can cultivate students' cross-disciplinary thinking and comprehensive abilities, laying a solid foundation for their future development.

In summary, future experimental teaching in international trade practice, supported by digital empowerment, will focus more on innovations and developments in areas such as teacher-student interaction, holism and integration, curriculum design research, and interdisciplinary fusion. These changes will help improve the quality and effectiveness of experimental teaching, laying a solid foundation for cultivating more high-skilled talents in international trade practice with excellent practical abilities and innovative spirits.

4. Construction and Effects of the Single Window Experiment

4.1. Construction of the Single Window Experimental Platform

Experimental teaching has always been an indispensable component in the cultivation of talents in international trade majors, closely related to nurturing their practical and innovative abilities in foreign trade. The real foreign trade transaction environment involves multiple roles and functional institutions such as importers and exporters, customs, commodity inspection authorities, banks, foreign exchange administration bureaus, insurance companies, and their mutual coordination. The "Single Window Trade Model" is a trade model that has been promoted domestically in recent years. In the past, foreign trade business processes involved multiple individuals and departments, with long process cycles. Now, under the Single Window Model, various business-related departments conduct trade on a single platform. This can reduce manpower, lower enterprise costs, streamline processes, improve approval efficiency, share information, and mitigate risks.

China Customs implemented the Single Window system starting from September 1, 2018, and promoted it in more than 20 cities including Hangzhou, Beijing, Shanghai, and Nanjing. Currently, the Shanghai International Trade Single Window supports data processing for over a quarter of the country's trade volume, becoming the largest Single Window in terms of data processing globally. The Single Window trade model places higher demands on the overall

quality and professional competence of practitioners. With the consolidation of windows, many business processes have been consolidated into a single node, transforming the original multi-person division of labor and cooperation model into a Single Window task. This requires practitioners to possess all the knowledge and skills related to customs declaration and inspection. These developments have raised higher requirements for the cultivation of international trade talents in universities and the retraining of practitioners in the industry.

By constructing a Single Window experimental platform, we utilize information technology on the basis of virtual simulation software to simulate the entire process of the Single Window trade environment, recreate the internal logical relationships of the Single Window trade model, simulate the risks and anomalies in international trade under this model, and allow students to trial and error in economic behaviors in a variable environment. This achieves low-cost practical operation training and trade behavior simulation for students, cultivating international trade professionals who can adapt to the requirements of the new situation. After the practical application of this experimental platform in teaching, it has demonstrated several innovations that distinguish it from traditional international trade practice coursework, mainly including the following points:

4.1.1. Promoting the integration of theory and practice

The content of traditional international trade practice teaching mainly focuses on the basic concepts of international trade, the connotations of trade terms, types of trade risks, relevant legal and policy provisions, etc., with an emphasis on theoretical teaching. However, this course is highly practical, and there are some prevailing conventions, universally implemented principles, and customary practices in the actual trade process, which exhibit high flexibility. Therefore, there is a significant difference between textbook theory and practical operation, requiring a link to connect the two - namely, experimentation. Traditional experimental sessions are designed based on course knowledge points in the form of unit modules, and the roles played by students are relatively fixed according to the experimental design. This results in fragmented sessions, limited role-playing, and a lack of logical connection among documents. The Single Window experimental platform integrates trade processes and knowledge points, reproducing the logical relationships among business documents. During the design of experimental projects, the knowledge points originally distributed across various courses were integrated. Meanwhile, under the context of scientific and educational supplies cases, the complex internal logic among various documents was recreated, and a system-level inspection mechanism was innovatively designed, providing an audit reminder function for the requirements of document coordination among different departments. This achieves an organic integration of theory and practice. Students play diversified roles, involving banks, customs, buyers, sellers, and other entities, allowing them to understand the details of international trade operations from different perspectives. By going through the complete trade process, students can connect the unitized and fragmented theoretical knowledge from textbooks and think about the internal logical relationships among various links on their own. By playing different roles, they can understand the responsibilities and obligations of each identity and apply various trade terms flexibly in practice. This brings the knowledge in textbooks to life and lays a solid foundation for flexibly applying theoretical knowledge in practical operations later on.

4.1.2. Achieving interdisciplinary integration

International Trade Practice is a highly applied discipline that involves numerous aspects in its application process. It not only requires students to have a thorough understanding of cultural differences and master cross-cultural communication skills but also necessitates a certain level of financial and legal knowledge, making it a course with extremely high comprehensive requirements. Therefore, in the learning process, it is necessary to integrate knowledge from

multiple disciplines. The Single Window experimental platform encompasses all aspects of Single Window trade, integrating course knowledge from subjects such as International Trade, International Trade Practice, International Finance, and International Commercial Law into each link. Students need to thoroughly understand and comprehensively apply the professional knowledge involved in these courses, including trade rules, document specifications, process control, risk management, etc., and then independently conduct experiments in more than 30 trade steps, such as signing contracts and applying for certificates of origin.

4.1.3. Adopting novel teaching approach utilizing virtual reality

Fully simulating single-window trade operations, this embodies the essence of "virtual simulation." Real-world international trade involves large amounts of money and numerous process elements, with uncontrollable factors such as exchange rates and transportation risks directly impacting the trade process. This lab simulates the single-window foreign trade process at a 1:1 ratio, with fully simulated business processes and operational interfaces, allowing students to practice and trial-and-error without cost in a lab environment. Additionally, the system offers practical parameter settings, enabling teachers to flexibly configure various foreign trade parameters and risk thresholds from the backend, such as exchange rates, port and airport data, and adjustable risk thresholds for maritime disasters, to simulate real-world scenarios and assess students' responses. Furthermore, the experimental platform supports real-time switching between Chinese and English throughout, replicating the authentic trade environment. The system is equipped with both Chinese and English languages, with all documents and processes internationalized. For domestic students, the system can help them quickly grasp the latest trade methods to meet industry demands after graduation. For international exchange students, this lab can help them understand and master China's trade rules, thereby better promoting China's trade model under the Belt and Road Initiative and facilitating international exchanges and cooperation between China and foreign countries.

4.2. Achievements in experimental teaching through the single window approach

4.2.1. Enhancing students' competence in foreign trade careers

Based on the demand for foreign trade talents in foreign trade enterprises, the focus of the International Trade Practice course should be on cultivating applied and skilled talents to enhance students' competence in foreign trade careers. Competence, first proposed by American professor David McClelland, refers to the deep-level characteristics of individuals that distinguish outstanding performers from average performers in a particular job. These characteristics can include motivations, traits, self-images, attitudes or values, knowledge in a certain field, cognitive or behavioral skills, and any individual traits that can be reliably measured or counted and significantly differentiate excellent from average performance^[3]. This theory has gradually been applied to various fields, and the Single Window experimental platform is conducive to enhancing students' competence in foreign trade careers.

Firstly, the experimental platform facilitates students' familiarity with foreign trade processes. It covers all aspects of foreign trade operations, including establishing trade relationships, negotiation, contract signing, contract fulfillment, document preparation and foreign exchange settlement, verification and tax rebate, etc. This helps students become acquainted with the various procedures involved in import and export trade work, as well as the legal provisions pertaining to each stage. Having a comprehensive understanding of the entire process is fundamental to competence in foreign trade careers. Additionally, the platform simulates potential special circumstances, such as transportation risks, exchange rate fluctuations, and arbitration. In the face of these unexpected situations, students are required to make reasonable arrangements and responses to minimize losses.

Secondly, the experimental platform enhances students' communication and negotiation skills. In international trade, significant cultural differences may exist between buyers and sellers, making strong communication abilities and good negotiation techniques crucial for the success of a trade. On this experimental platform, when simulating the roles of buyers and sellers, students are required to exchange correspondence in English. This necessitates a high level of English proficiency and proficiency in writing business correspondence in English, thereby strengthening communication with suppliers and ensuring product quality and delivery schedules. Additionally, students engage in simulated negotiations in realistic settings, which further reinforces their communication and negotiation skills.

Thirdly, the experimental platform improves students' ability to prepare and process documents. Modern international trade is characterized by symbolic delivery, making the ability to prepare and handle documents a core competency in foreign trade careers. On this platform, students are required to deal with various documents from different perspectives, such as handling letters of credit, bills of exchange, and other documents with banks as buyers or sellers; managing bills of lading, packing lists, and other documents with freight forwarders as buyers or sellers; and reviewing customs declarations, inspection reports, and other documents as customs officials. By understanding the key content of the same document from different roles and the role it plays in the trade process, students gain a comprehensive understanding of documents, thereby enhancing their ability to prepare and process them.

Due to its simulation of transaction processes under different combinations of trade terms and settlement methods, as well as its flexible adjustment of experimental duration, this experimental teaching reform has, since its implementation, not only cultivated over 300 Chinese undergraduate and graduate students, helping them seamlessly transition from school to the workplace; it has also been applied in the teaching of international students, facilitating their enhancement of practical skills for conducting trade with China. Furthermore, it has even attracted foreign trade enterprises in the Jiangsu-Zhejiang-Shanghai region to utilize this experimental platform for training new practitioners, receiving widespread acclaim.

4.2.2. Assist in cultivating experimental teachers

Currently, there is a widespread lack of dual-qualified teachers in the experimental teaching faculty. Most university teachers have conducted extensive research in international trade theory but lack practical work experience in enterprises. Therefore, they cannot effectively connect theory with practice and transform textbook knowledge into practical skills during the teaching process. A small number of experimental teachers may come from enterprises and possess considerable practical trade experience, but they lack theoretical research and lack a framework and comprehensiveness in teaching. The Single Window experimental platform can help facilitate the cultivation of dual-qualified teachers. Through this simulation platform, university teachers who lack practical trade work experience can gain a comprehensive understanding of the real trade environment, apply their extensive theoretical knowledge to guide practice, and thereby pay more attention to students' practical operations and the applicability and operability of knowledge in teaching international trade practices ^[4].

5. Prospects for Digitally Empowering the Cultivation of High-Skilled Talents in International Trade

With the development of the times, the teaching of international trade practice must move towards cultivating applied talents who possess both systematic theoretical knowledge and certain practical experience in international trade. Currently, the integration of customs and commodity inspection has already been achieved, and it is foreseeable that the single window will be a major trend in future development. Therefore, teaching must evolve in this direction, and the existing experimental teaching platforms still need further improvement.

First and foremost, the textbooks for international trade practice need further refinement. Current textbooks are either purely theoretical or serve as singular experimental guides, with a prominent lack of highly integrated experimental materials, which directly affects the effectiveness of experimental teaching. To address this, there is an urgent need for a digital textbook that integrates key process knowledge points with experimental guidance to support our teaching reforms and innovative practices. Therefore, universities should strengthen cooperation with enterprises and industries to jointly develop experimental textbooks with practical application value. In the process of textbook compilation, emphasis should be placed on combining theory with practice, incorporating more real-world cases and industry experience to help students better understand and master international trade practice knowledge. Additionally, the content of experimental textbooks should keep abreast of the latest developments in the field of international trade, being continuously updated and refined to ensure their timeliness and practicality.

Furthermore, the experimental platform still needs improvement. The current Single Window experimental platform has relatively fixed processes. After teachers set the parameters, students only need to follow the prompts and complete the corresponding operations step-by-step, lacking independent thinking about the entire process. When conducting experiments using different trade terms, students fail to reflect on the responsibilities and obligations of buyers and sellers under those terms. This results in students focusing on the details of the trade process but lacking control over the entire workflow, which may cause them to overlook important aspects once they enter practice and work. The experimental platform should add options for selecting full-process items, where students need to independently choose the required items based on the current trade environment and trade terms used. This will enable them to not only grasp the entire trade process but also control the details of each process, gaining a comprehensive understanding of international trade practice.

Additionally, it is crucial to improve the experimental teaching evaluation system. A scientific experimental teaching evaluation system is of great importance to teachers responsible for or conducting practical teaching, and this is no exception for teachers engaged in practical teaching in international economics and trade. A scientific experimental teaching evaluation system not only helps evaluate teachers' experimental operation abilities and experimental teaching levels, promoting teachers to improve and innovate their experimental teaching methods, but also enhances students' practical abilities and innovative thinking. Compared to theoretical teaching evaluation, the evaluation of experimental teaching requires the participation of peer experts, and even post-evaluation by human resource managers from employing organizations. This not only motivates teachers to improve their practical teaching abilities but also effectively promotes the optimization or upgrading of relevant practical teaching software through feedback from these evaluations. Furthermore, to further enhance the work enthusiasm of practical teachers, the results of experimental teaching evaluations can be linked to teachers' professional title assessment policies. Performance in areas such as experimental teaching abilities, experimental teaching achievements, and experimental teaching innovations should be included as important indicators in professional title assessments. Teachers who perform outstandingly and receive excellent evaluations in experimental teaching should be given additional points. Such policy guidance can greatly stimulate practical teachers' teaching enthusiasm and innovation abilities, driving the continuous improvement of experimental teaching quality.

6. Conclusion

This study points out that digital teaching is highly necessary in the teaching of international trade practice, as it can significantly enhance teaching quality and efficiency, strengthen

students' practical operating skills, facilitate teacher-student interaction, and improve teaching flexibility and adaptability. However, the current teaching mode faces limitations such as a shortage of dual-qualified teachers and an imperfect practical teaching system. Nevertheless, future teaching of international trade practice exhibits new trends, emphasizing teacher-student interaction, integration of experimental content, deepening of curriculum design research, and innovative experimental teaching that crosses disciplines. The single-window experimental platform, due to its effectiveness, plays a crucial role in simulating the entire process of international trade, promoting the integration of theory and practice, enhancing students' competence in foreign trade careers, and cultivating dual-qualified teachers. In addition, to meet the demands of digital teaching, existing textbooks and experimental platforms need further improvement to ensure the timeliness and practicality of their content. Meanwhile, establishing a scientific evaluation system for experimental teaching is crucial for enhancing teachers' teaching and students' practical abilities. This study was supported by a key project of the special topic "Research on Smart Education and the Digital Transformation of Teaching" in Jiangsu Province universities, reflecting policy-level attention and practical application value. In summary, the reform of international trade practice teaching through digital empowerment is vital for cultivating high-skilled international trade talents in the new era. In the future, continuous exploration of effective digital teaching pathways, constant optimization of teaching content and methods, and promotion of high-quality development in international trade practice teaching should be pursued.

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