



# Reconstruction and Optimization of the Course System of Documentary Evidence Integration for Textile Engineering Under the 1 + X Certificate System

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**Abstract.** Under the challenge brought of the “1 + X” certificate system, the connection of knowledge points between the curriculum system of textile engineering specialty at the reconstruction of target, adjustment of content, and the reform of teaching methods. Combine the development demand of textile industry, analyze the demand of textile engineering ability and quality, to ensure that the professional talent training program to achieve a good connection between the professional and the enterprise. Through the docking of textile fabrics, the development of vocational skill level standards, the optimization of course structure, and the reconstruction of the objective of documentary evidence integration, so as to realize the teaching reform of the cross extension training of professional ability, method ability and social ability.

**Keywords:** 1 + X certificate system · Textile engineering · Documentary evidence accommodation · reform in education

## 1 Introduction

With the movement revolution from Made in China to Refined in China and the rapid development of the current market economy, Made in China has gradually become one of the most recognizable labels in the world. From daily clothing of human beings, furniture and electronics to aerospace precision parts, huge and accurate industrial manufacturing system in China is constantly exporting to the world. Looking around the world, the multi-certificate system has become the basis for the cultivation of international skilled talents in the UK, Germany and Switzerland. For many years, vocational education has been imitating ordinary higher education, and has not been planned and designed as a type of education. The “1 + X” certificate system can bring opportunities to vocational education, and after its development is mature, it will be integrated with international vocational education certification, and consolidate China’s talent base for the future. The launch of the 1 + X certificate system is a policy and strategy put forward under the premise of China’s integration with the international skilled personnel training system and standards, which is conducive to promoting China’s goal of training high-quality and

international skilled personnel with multi professional skills, multi-professional knowledge, international vision and the ability to participate in international competition [1]. The development of a country needs not only the research of top talents, but also the skills of tens of millions of high-quality workers. For higher vocational colleges, the “1 + X” certificate system is both an opportunity and a challenge. With regard to the problems faced by textile engineering major in higher vocational colleges, such as enrollment difficulties, weak skill training mode, insufficient cooperation between schools and enterprises. The “1 + X” certificate system proposes sufficient and feasible ways to optimize professional curriculum and professional assessment conforms to the needs of enterprise, will fundamentally provide guarantee and outlet for professional skills education, and fundamentally solve the problem of training senior technical personnel in China [2].

## **2 The Significance of Documentary Evidence Under the “1 + X” Certificate System**

The implementation of the “1 + X” certificate system is conducive to training application-oriented talents, enriching students’ practical skills, and deepening the practice of higher education reform. It aims to solve the problems that higher education is not closely related to the economic and social development, the training mode of compound skilled talents and teaching evaluation are unreasonable, and social forces are not enthusiastic about participating in vocational education. The implementation of the “1 + X” certificate system enables college students to become versatile talents with “one specialty”. In addition, the course system of documentary evidence can help students of textile engineering and correlation major fully understand their professional needs, stimulate their enthusiasm and potential for learning, improve the sustainability and applicability of their learning achievements, and realize the output of high-quality compound technical and skilled talents in higher vocational colleges [3]. Therefore, under the 1 + X certificate system, colleges and universities should establish and improve the course teaching system of “documentary evidence integration”, improve and perfect the talent training mode, strengthen the school enterprise cooperation mechanism, strengthen the training of practical skills, optimize educational resources, provide students with a fine applied learning environment, and create more practical opportunities to improve the textile engineering practice [4].

In January 2019, the Ministry of Education and other departments jointly issued the “Pilot Plan for Implementing the “Academic Certificate + Several Vocational Skill Level Certificates” System in Colleges and Universities, referred to as the “Academic Certificate + Several Vocational Skill Level Certificates” system of the 1 + X certificate system [5]. The pilot work was officially launched on lots and lots of engineering programs in all kinds of universities, colleges and vocational schools on a national scale. In April 2019, the Ministry of Education issued a pilot plan once again, clearly proposing that the reform of the education mechanism will be launched around the professional structure setting, course structure content, and teaching staff construction level, is aimed at promoting the implementation of the 1 + X certificate system, and simultaneously improving the higher quality education in textile engineering. A fine implementation of the application type brings development opportunities and better opportunities in their employment process and prospective work capability on the employment post.

### 3 Course System Reconstruction and Optimization of Design “Documentary Evidence Integration” for Textile Engineering Major Under the 1 + X Certificate System

As is known to all, “1” under the “1 + X” certificate system has the characteristics of basic and subjectivity, and mainly solves the education problems of students’ comprehensive development of morality, intelligence, physique, beauty, labor, and professional and technical skills corresponding to their careers, and lays a solid foundation for students’ sustainable development; “X” has the characteristics of pertinence, guidance, and advancement, and mainly solves the problem of strengthening, supplementing or expanding students’ skills, professional qualities or new technologies and new skills [6]. The integration of “1” and “X” is the essence and soul of the design of the “1 + X” certificate system. The optimization of the “documentary integration” curriculum system between the textile engineering major and the textile fabric development 1 + X vocational skill level certificate is a systematic project, which mainly includes the goal reconstruction of the curriculum system, function optimization, content adjustment, and teaching method reform. Aspect. The implementation and promotion of “documentary financing” will help the industrial upgrading and high-quality transformation of textile industry in China, help students expand their employment and entrepreneurship skills, and effectively alleviate the problem of structural employment contradictions. The optimization ideas are shown in Fig. 1.

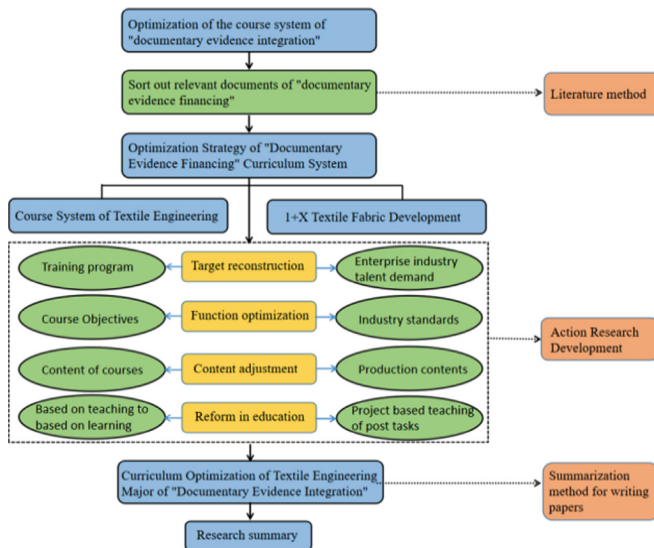


Fig. 1. Optimization idea roadmap

## **4 Course System Contents of “Documentary Evidence Integration” for Textile Engineering Major Under the 1 + X Certificate System**

First of all, combining the development needs of the textile industry, on the basis of accurate analysis of the specialty oriented post group, we sorted out the requirements for textile engineering ability and quality, to ensure that the professional talent training program achieves a fine connection between the specialty and the enterprise needs; Secondly, optimize the function of the professional curriculum system in the textile fields. On the one hand, it is reflected in the connection between the implementation of the professional curriculum standards and the 1 + X skill level training, and on the other hand, it is reflected in the talent training concept of the industry standards; Furthermore, explore the “multi interface, diversified” curriculum system of textile engineering specialty in specific practice, and build a “3 + 1 + 4” model curriculum system based on the industrial production process of textile engineering specialty. Among them, “3” refers to the courses corresponding to the pre-weaving, weaving and post weaving of the standard textile production process. The pre-weaving courses include textile materials, textile introduction, fabric structure design, design software and application, spinning, etc. The weaving courses include the core of weaving technology, knitting technology, non-wovens technology, new weaving technology, new type fabric design and process, etc. The post weaving courses include the basics of dyeing and finishing, printing and dyeing practice, woven CAD Clothing fabric design, comprehensive design, etc. “1” refers to a 1 + X certificate examination course for textile fabric design. As a batch of undergraduate students, they need to take an advanced level examination, which can highlight the cultivation of students’ application-oriented abilities. The “4” in the mode means four main courses corresponding to 1 + X advanced textile fabric design certificate, namely fabric structure design, fabric design practice, jacquard CAD and comprehensive design. Finally, the reform curriculum realizes the transformation of teaching essence from “teaching based” to “learning based”. In the specific teaching process, through the learning situation of integration of production and teaching, based on enterprise projects and real job tasks as the carrier, carry out project-based teaching, practice the teaching concept reform of “student oriented, teacher led”, and strive to cultivate the training goal of “high-quality technical textile engineering talents, which do not seek the largest, but seek the best and adapt to social requirements”.

## **5 Course System Reconstruction and Optimization Measures of “Documentary Evidence Integration” in Textile Engineering Under the 1 + X Certificate System**

### **5.1 The Documentary Evidence Integration System is Conducive to Promoting the Improvement of the Modern Skills Education and Training System**

The 1 + X certificate system has not only fundamentally promoted the reform of textile engineering professional skills education, but also has profound practical significance for the training of textile professional skills required by society, and has promoted the

improvement of the application-oriented system of modern higher education. Higher education serves economic and social development, cultivating and transporting professional and technical personnel to meet the requirements of social and economic development. The implementation and promotion of the reconstruction of the course system of “documentary integration” for textile engineering under the 1 + X certificate system will greatly improve the versatility and professionalism of modern textile skilled personnel, and promote the organic integration of the training function of textile engineering skilled personnel with economic and social requirements.

The skill training and examination system of the Textile Engineering 1 + X certificate has greatly promoted the mutual exchange of college training and market demands. It has promoted the improvement and reform of school education of textile engineering from the perspective of the market demands. The reconstruction and optimization of the curriculum system of textile engineering should fundamentally endow colleges with the characteristics and diversification of textile engineering talent training. The optimization of education courses in schools should be determined by market trends and needs. Proceeding from actual needs, enrich and adjust the course structure and learning content, improve the evaluation criteria for professional and technical talents, and realize the mission of cultivating application-oriented talents as soon as possible.

## **5.2 The System of Documentary Evidence is Conducive to Promoting the Integration of Professional and Technical Talents in China with International Standards**

Globalization is the most important and irreversible trend of economic development since the 21st century. China is constantly adapting to various requirements of international globalization with a more open and flexible attitude and is gradually becoming a leader in maintaining globalization [7]. In the process of globalization, textile manufacturing industry in China has continuously adjusted its supply chain and industrial chain to actively integrate into and adapt to the pace and rhythm of internationalization [8]. The cultivation of internationalized textile engineering and technical skills is a key part of many factors. Looking at the international development process, countries such as the United Kingdom, Germany, and Switzerland and some others country, have gradually recognized the multi-certificate system as the basis for the cultivation of internationally skilled talents in the training of professional and technical talents. Therefore, the launch of 1 + X certificate system in China is the integration of skilled personnel training systems and standards at home and abroad. The reconstruction and optimization of the professional “documentary integration” of textile engineering curriculum system have important practical significance for the cultivation of high-standard and high-quality international professional and technical personnel to achieve international competition.

## **5.3 The Documentary Evidence Integration System is Conducive to Mobilizing More Social Forces to Deeply Participate in the Teaching Quality of Skills Education**

According to the China Human Resource Development Report (2017), the manufacturing industry in China is in a special period of transition from the labor-intensive to

technology-intensive. At the same time, there has been a structural shortage of labor force, which has caused the domestic desire for blue-collar groups to reach an unprecedented height [9]. The technology of blue-collar talents in textile engineering often requires to be polished and exercised by universities and social enterprises [10]. In the process of restructuring the curriculum system of documentary evidence integration, more integration into the technical requirements of social enterprises is required and necessary. The construction of professional courses is deeply integrated into the teaching plans of professional courses. The implementation of the 1 + X textile engineering professional certificate system will mobilize more social textile industry forces to participate in professional education, especially in the practical training and training of spinning technology, weaving technology, knitting technology, non-woven technology, and other professional skills practical experience. To truly “feedback” the most practical technical skills training in professional education from the level of market demand, form a positive skills transmission channel between universities, employers, and learners, thereby fundamentally improving the quality of teaching and the quality of serving the society.

## 6 Conclusion

In a word, in the process of restructuring and optimizing the “certificate integration” curriculum system of textile engineering under the 1 + X certificate system, in combination with the development requirements of the textile industry, given the professional skills gap of students, analyze the social requirements and the professional skills required by the post requirements, optimize the professional talent training program, and reform the existing curriculum system, At the same time, we should always understand and sort out the connotation of the “documentary evidence integration” curriculum system, and comprehensively consider the problems of students’ development and corresponding professional skills teaching [11]. In the education work, based on the “1 + X” certificate system and the characteristics of the school, the vocational skill grade standard is closely connected with the professional construction, curriculum construction, teaching resources construction, etc., and the training program is designated according to the national needs, social needs, market orientation, etc., to establish an open talent training quality, effectively improve the students’ theoretical and professional skills, so that more students can obtain the “X” certificate, In order to meet the needs of society and enterprises for professional and technical personnel, so as to promote the overall educational construction capacity of higher vocational colleges. Vocational education in the new era must gradually reflect the important status of different types, relieve the pressure of social employment, reduce the cost of education, and help the national economic development. We should get rid of the traditional teaching mode, enhance students’ professional knowledge reserves and practical operation ability, ensure that students can quickly adapt to the rapid development of society, and create a “one expert and versatile” composite talent, striving to achieve the training goal of “high-quality technical textile engineering talents who do not seek the maximum, but seek the best and adapt to social requirements” proposed by the General Secretary as soon as possible.

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