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Improvement Of Design Competencies Of Future Specialists By Means Of Modern Technologies

G. Shirmatova
Independent researcher of the National pedagogical university of Uzbekistan named after Nizami, Uzbekistan

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Abstract: This article, based on international experience, tries to identify the opportunity to increase the design competencies of future specialists within the current educational and professional context through the use of modern technologies. The research takes into consideration some challenges that already exist in the process of training and further suggests practical approaches for overcoming them efficiently.

Keywords: Professional activity, technological progress, industrial enterprises, production, international organization of labor, dual training, SNIISHP, Muller, SAPR, Gerber, Gemini, Julivi, Assyst, Graphics programs, Fashion Design, modelling.

Introduction: In the era of the global information age, some changes are possible within the scope of training technological educational specialists, as well as in all other areas. In order to further enhance the investment attractiveness and competitiveness of the textile and garment, knitwear industry of the republic, aimed at increase the export potential of the industry, and facilitate the conditions for deeper penetration of domestic textile products into the foreign markets, it was decided to introduce the Decree of the President of the Republic of Uzbekistan No.71 dated 01.05.2024 “On measures to bring the development of the textile and garment, knitwear industry to a qualifiedly new level”. In connection with the implementation of the Decree, there are some tasks, namely: organize targeted work on implementation of the “Textile hub” initiative within the Republic, develop at least 10 globally recognized domestic brands, take efficient measures aimed at helping enterprises to realize the sale of their goods on the domestic as well as on the foreign markets. There is a need to develop proposals on development of national brands based on the studying of the best practices of foreign countries developing a highly developed fashion, design sector, involving at least 10 top-class highly professional foreign specialists within the frameworks of the [1] cited centers.

Since then, the head of state has repeatedly called attention to the need to organize favorable conditions for the domestic production sector, equip it with modern equipment, develop a high degree of digitalization by introducing information technologies on a mass scale into production, and, of course, to equip the sectors with highly qualified personnel in order to attract highly qualified foreigners.

Hence, when training high-quality personnel, it is necessary to enhance not only their skills but also scientific potential, examine foreign experiences by entering into a dialogue with representatives of highly recognized organizations, thereby developing production within the country, so that local businesses take their worthy place within the globally competitive enterprises meeting international standards. In scientific terms, design skills are considered a complex integrative learning formation that comprises professional knowledge, practical skills, creative thinking, computer literacy, and the application of innovative technologies in a production setting. Foreign research on vocational education and engineering education indicates that the effectiveness of professional education in the textile industry is significantly improved when educational content is adjusted for industrial digitalization. The adoption of CAD/SAPR technologies has altered the professional requirements of designers, who now require skills not only in art but also in computer modeling, data processing, as well as technological optimization.

In this regard, the careful blend of traditional

construction technologies (SNIISHP, Muller) with modern CAD systems supports a consistent development from classical professional knowledge to modern technologies. On the one hand, traditional construction technologies develop analytical and structural thinking, while CAD systems increase precision, speed, and variability of design tasks on the other. Scientific research has proved that a consistent approach integrates students' systemic thinking skills and technological flexibility, which are essential elements of professional readiness. In addition, the implementation of dual education systems is supported by the theory of contextual learning, which particularly highlights the relevance of professional competence development within the production environment. The advantage of this system is that students are capable of working with modern machinery, familiarizing themselves with industrial standards, and developing professional responsibility, thereby largely closing the gap between education and labor market requirements.

After the reforms have been implemented in our country by our President, human resource capacity development, scientific projects/grants, development projects, as well as cooperation projects with international producers, started implementation in Uzbekistan. On this matter, this year, a Forum on "Innovation, cooperation & regulation - drivers of the textile and apparel industry" has been organized by ITMF in collaboration with International Textile Manufacturers Federation and IAF- International Apparel Federation. The Forum provides a platform for stakeholders of the industry, including raw material producers, spinners/weavers, machinery suppliers, textile/apparel & home textile producers, brands, retailers, problem solvers, and academics/educators, to come together. Industry leaders will examine the relevance of innovation, cooperation, & regulation in our industry, as well as how they might affect the sector.

International conferences, projects, etc. are necessary for promoting the textile industry of Uzbekistan globally, which increases the volume of exported as well as imported textile products by ensuring a healthy competition. Along with the collaboration of ITMF and IAF Federations, the required information in order to provide digital products, as well as developing a 3D design, development, etc., would be provided by them, ensuring that within all sectors of the textile value chain, there is a smooth exchange of information with international relevance to the latest industry trends.

The following favorable conditions will be created for the training of competitive staff in line with the markets, development of modern educational programs in compliance with the best foreign practices, and development of the technological educational system owing to scientific projects, developments, and events abroad:

It is necessary to particularly pay heed to the organization of informational resources in the education sector in the contemporary era, as a result of which new technologies are developing by the day, and the informatization process is developing extremely quickly in the country. The reason is that the informational technologies are being introduced extremely quickly into the sector of garment manufacturing, as all sectors are integral components in the development of our country's economy. The application of informational technologies in the educational process in technological education is one of the most efficient methods that enable the implementation of the goal.

In the course of professional competence formation, of course, there is a need for a comprehensive improvement of deep professional knowledge. It is considered desirable to define what particular synthesis of knowledge from professional disciplines is required for future specialists, as well as to inform on the specifics of the knowledge taking part in such synthesis, on relationship between them, structure, and relationship with other disciplines within the educational process.

The most significant problem that teachers of technological education are going to face in the modern socio-economic setting, in which high standards are set regarding professional competence, is linked to the development of professional competence that would make it easy for students to find employment within the labor market. In current times, as per the growth of modern teaching ideologies, these tasks are undergoing a positive transformation. Obviously, in this situation, knowledge regarding the subject matter should not remain external to the teaching structure but should remain a directing element.

It is necessary to organize educational activities in a two-fold way: theoretical learning, together with practical training as an educational process for the training of technicians in technological education. In particular, it results in the appearance of technological education as a result of the social partnership mechanism, which is a means of cooperation between the state, employers, and different organizations in training highly qualified personnel within the requirements of the labor market. Additionally, technological education is identified as an educational phenomenon that has managed to effectively adapt

itself to the conditions of a market economy, which affects the development of technological education around the globe, including the Republic of Uzbekistan. [3].

The elaboration of joint curricula by experts of an educational establishment and an enterprise with the application of elements of the dual education system promotes the successful development of technologically significant competencies. In particular, the Presidential Decree No.4145 dated February 1, 2019 “On measures to further expand multilateral cooperation between the Republic of Uzbekistan and the Federal Republic of Germany” assigned the implementation of organizing dual education. Dual education is mentioned in a separate article of the newly adopted Law “On Education”. The implementation of dual education is expressed in the Decree No.6108 dated November 6, 2020 “On measures to develop the education and science sector in the new period of development of Uzbekistan”.

The government has been particularly careful concerning the implementation and development of the dual education system because of a problem linked with unemployment, preparing personnel with regard to the needs of enterprises, creating a foundation for an innovative economy, and applying international experience within the educational sector at the national level [2].

It is worth noting that with the recommendation of dual education in every field of education within our country, the institutions of education themselves would have a chance to prepare highly qualified personnel corresponding to the demand in the labor market. Dual education is an educational program that gives a student the chance to work and develop his skills in an organizational environment corresponding to his specialty in a particular enterprise or organization while studying in a higher educational institution. The most significant advantage of this educational program is that students can master how to work with the most modern equipment and machines used in the enterprise or organization within 3-4 years. It is one of the most significant advantages of the dual educational system. In addition, with the help of the dual educational process, a student is introduced to the labor team.

On the basis of the analysis of existing educational practice, the following problems can be identified:

lack of adequate integration of digital technologies within the educational process of design and modeling of garments;

mismatch between educational curricula and real industrial requirements, especially in the use of modern CAD systems;

limited training opportunities for students in a real production environment;

lack of pedagogical staff with professional skills in modern design technologies;

fragmented application of traditional design practices, as well as modern computer design methods, resulting in an incomplete development of professional competence.

Till recently, teaching design and modeling in sewing design and modeling disciplines has been done on the basis of globally recognized design methods such as SNIISHP, Muller, etc. By applying these design methods, it is possible to design with a high degree of accuracy. Fashion designers working in modern sewing enterprises conduct their activity on the basis of automated systems, namely CAD programs. The application of CAD programs in enterprises provides an opportunity to record a perfectly worked-out pattern of a product in computer memory as a basis. At any time, the basic pattern is reproduced in computer memory, modified in accordance with the new product models, with changes. The design is released, with changes, on a plotter device, namely, prior to the production of the product, by making necessary changes to the basic design, on fabric.

The methods of applying modern sewing design software in reliable sewing enterprises of our capital were researched. In accordance with the statistical data, it has been revealed that from the existing: Gerber, Gemini, Julivi, Assyst, Grafis, and other sewing design software, the use of Gemini and Assyst system is common in practice as the most frequently used CAD software. On the basis of the obtained data, it is assumed that, in the future, the specialists studying within the scope of technological education should have theoretical and practical studying of the said CAD software to conduct their activity at the enterprise within their specialty. In applying sewing design software, the following tasks should be accomplished:

Modernization of the Curriculum. Implement modern educational programs that thoughtfully integrate classic design technologies (SNIISHP, Muller) with contemporary CAD solutions (Gerber, Gemini, Assyst, Julivi), thereby ensuring a harmonious development of theoretical skills alongside practical ones.

Extension of mechanisms of dual education. Enhancement of collaboration between institutions of higher education and textile enterprises to undertake joint activities in line with real tasks of textile production for continuous traineeships, practices, etc. Outfit learning institutions with computer labs, CAD

software, plotters, modeling software that promotes an industry-focused learning environment.

Professional development of teaching staff. Arrange high-level training sessions, industrial internships, and international exchange programs for teachers to develop skills in contemporary digital design technologies.

Implementation of Project-Based Learning. Project-Based Interdisciplinary Tasks that cover the entire process of designing clothes from designing to simulating, to production, to evaluation.

International cooperation, benchmarking. Take full advantage of the international organizations' (ITMF, IAF, UNESCO UNEVOC) best practices in textile and technological education, thereby harmonizing the national standards with best practices in education worldwide.

Additionally, we aim to enhance the quality of garments worn by people and the production rate of products because of the automation of designing garments;

to attract specialists (pedagogues) with skills in applying modern information technologies in professional activity;

classical content of training specialists in the area of modeling and design of clothes, development of skills of making optimal technical decisions within the application of computer technologies.

The competence level of design specialists in technological education can be improved by means of the implementation of computer modeling software in the practical process applying modern technologies that eliminate the problems mentioned above.

CONCLUSION

In conclusion, the enhancement of design skills of future specialists in technological education is a strategic priority, which can be solved with a comprehensive scientific-pedagogical approach. The combination of modern digital technologies, dual education models, and globally recognized design practices has created favorable conditions for growing competitive specialists who are capable of meeting the challenges of the worldwide textile and clothes industry. The application of CAD technologies, together with classical construction practices, provides a high level of professional skills meeting international standards. Accordingly, the suggested solutions not only add to enhancing the quality of technological education but also increase the innovation power and competitiveness of the textile industry on a global scale.

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