

*Bogdanova E.V., lecturer of the Mstyora institute of lacquer miniature painting named after F.A. Modorov – branch of the Russian university of traditional art crafts, 601408, Russia, Vladimir region, Vyaznikovsky district, Mstyora settlement, Sovetskaya str., 84; e-mail: sobogdanov4@yandex.ru*

### **Methodology for conducting practical classes on mastering machine embroidery technology in the system of secondary vocational education**

**Annotation.** The article analyzes the methodology for mastering and performing machine embroidery, designed for students in secondary vocational education. The research aims to study effective approaches to developing practical skills in the field of machine embroidery using the latest computer technologies. Particular attention is paid to familiarizing students with the unique aspects of the profession of embroidery machine operator. The educational process is carried out using modern equipment – a Brother embroidery machine.

**Keywords:** machine embroidery, hand embroidery, modern technologies, secondary vocational education.

The modern era of technological progress dictates the need for flexible thinking, the ability to quickly adapt to new conditions and a creative approach to solving emerging challenges [2, p. 157]. Traditional applied arts play an important role in developing the creativity and creative abilities of students, as they ensure the continuity of cultural traditions and contribute to the development of aesthetic taste [3, p. 3].

The synthesis of art and technology possesses significant potential, which facilitates the successful development of future artist-masters in the field of artistic embroidery. The skills acquired during practical classes on machine embroidery technology enable students to confidently work on computerized embroidery machines, apply these skills in their future professional activities and remain competitive in the labor market by offering exclusive products and services [2, p. 157].

Machine embroidery is performed on programmable devices that allow for the precise and sequential transfer of a design onto fabric and it is characterized by several distinctive features:

- ✓ high productivity, allowing for a large number of stitches per minute;
- ✓ computerized control, ensuring precise reproduction of the design;
- ✓ durability and wear resistance of finished products – the embroidery retains its attractive appearance, easily withstands repeated washing and intensive use;
- ✓ capability to work with various types of fabrics, including delicate materials (such as silk and organza), as well as the use of a wide range of sewing threads – cotton, synthetic, metallic and others.

- ✓ ability to apply complex and durable embroidery to fabrics of different compositions and weaves, minimizing errors and increasing the speed of production tasks;

- ✓ broad artistic possibilities, allowing for the creation of high-quality patterns in various techniques, including 3D embroidery, as well as the execution of logos, patches, insignias and various souvenir products (eco-bags, towels, scarves, etc.).

The modern work of an artistic embroidery master combines elements of construction, artistic creativity and design. To effectively bring ideas to life in machine embroidery, it is essential to master a wide range of techniques and technological processes in the art of embroidery.

Training in machine embroidery within the framework of secondary vocational education involves a combination of theoretical preparation, practical exercises and project-based activities. The main goal is to develop the necessary skills and knowledge in students for the professional application of machine embroidery.

The approach to organizing practical classes on mastering machine embroidery technologies is based on a combination of lecture materials, training assignments and the implementation of individual or group projects. The primary objective is to form competencies in future specialists that ensure the effective use of machine embroidery in solving production tasks [4, p. 163].

At the Mstyora institute of lacquer miniature painting named after F.A. Modorov, a program for studying machine embroidery technologies is implemented for students of secondary vocational education. Students acquire skills in working on modern embroidery machines and learn to combine machine embroidery with hand embroidery. Currently, conditions have been created for training high-level artists capable of developing exclusive products using exquisite hand embroidery, which meets the current demands of the fashion industry.

At the initial stage, before using embroidery machines, students thoroughly study the operation manuals and software for creating embroidery designs.

Students master:

- ✓ PE-design software;
- ✓ safety regulations and sanitary-hygienic requirements when working on an embroidery machine;
- ✓ machine embroidery techniques, accessories, tools and materials used in the process;
- ✓ rules for preparing the embroidery machine for operation, equipment maintenance and thread tension adjustment;
- ✓ methods for securing fabric in hoops;
- ✓ transferring a composition into the embroidery machine program;
- ✓ application of machine embroidery in modern clothing decoration;
- ✓ possibility of combining machine and hand embroidery.

For the spartakiad of the Russian university of traditional art crafts (RUTAC) - 2024 “Creativity, sport, health”, an original logo was developed. Over several days, the design was edited in the PE-design computer program. Multiple versions of the

design were created, along with their optimal sizes and thread colors were carefully selected (Fig. 1<sup>81</sup>).

The next stage involved preparing the fabric for embroidery by mounting it in the hoop. The outer hoop is placed on a stable, flat surface, the fabric is laid on top and then secured with the inner hoop. The fabric must be tightly stretched – this directly affects the quality of the embroidery. The stretching process is performed carefully: the thumbs of both hands are positioned on the inner hoop, while the remaining fingers stretch the fabric – first along the warp thread and then along the weft thread, rotating the hoop by half a turn. It is unacceptable to stretch the fabric diagonally – from corner to corner – to avoid distortion of the design and deterioration of embroidery quality [1, p. 5].

Several embroidery samples were created in different color palettes. Immediately before starting the embroidery on the fabric secured in the hoop, a fusible interfacing was applied. Interfacing is used in machine embroidery as a backing material that stabilizes the fabric and makes the embroidery more durable. There are various types of interfacing (adhesive and water-soluble), but the most convenient is considered to be water-soluble, as it is much easier to remove after the work is completed. To remove water-soluble interfacing, the finished product simply needs to be rinsed under running water without using soap. After this, no traces or stains remain on the fabric [5] (Figs. 2-4).

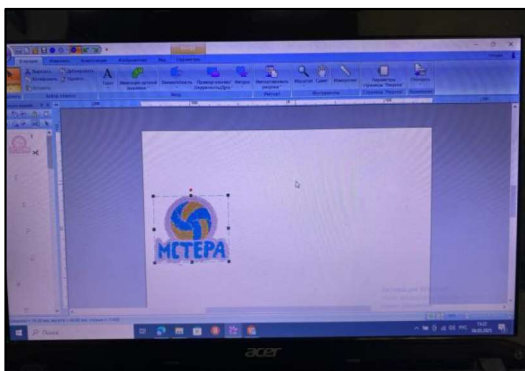


Fig. 1. Editing a design in the PE-design software



Fig. 2. Embroidery process on a Brother embroidery machine



Fig. 3. Securing the fabric in the hoops



Fig. 4. Embroidery process on a Brother embroidery machine

<sup>81</sup> Figs. 1-6. Photo by the author of the article.

In the process of complex, new and engaging work, students of secondary vocational education participated with great enthusiasm and interest in the study, design, and creation of new embroidered items. Each design variant was embroidered as a sample. The most successful samples were reproduced on items prepared for the spartakiad. The students gained basic experience working on the embroidery machine (Figs. 5, 6).



Figs. 5, 6. Work performed by students of the Mstyora institute of lacquer miniature painting named after F.A. Modorov

Currently, at the Mstyora institute of lacquer miniature painting named after F.A. Modorov, students continue to master machine embroidery and work with modern computer software.

The acquired skills in operating computerized embroidery equipment allow them to further utilize these competencies in their professional activities and become sought-after specialists in the labor market. The training program also includes familiarization with the key professions involved in the creation of modern embroidered products – from fashion designers to quality control specialists. Additionally, it provides opportunities for establishing their own business in the field of embroidery and textile design.

### References

1. Eremeeva Z. A. Rukovodstvo po mashinnoj vy`shivke / Z. A. Eremeeva ; Nauchno-issledovatel`skij institut xudozhestvennoj promy`shlennosti. – Moskva : KOIZ, 1954. – 28 s. – Tekst : neposredstvenny`j.
2. Komissarova I. A Metodika vy`polneniya mashinnoj xudozhestvennoj vy`shivki v texnike «Rishel`e» / I. A. Komissarova. – Tekst : e`lektronny`j // Tradicionnoe prikladnoe iskusstvo i obrazovanie : e`lektronny`j zhurnal. – Sankt-Peterburg, 2020. – № 3 (34). – S. 154-160. – DOI 10.24411/2619-1504-2020-00061. – URL: [https://dpio.ru/stat/2020\\_3/2020-03-17.pdf](https://dpio.ru/stat/2020_3/2020-03-17.pdf) (data obrashheniya: 25.04.2025).
3. Maksimovich V. F. Tradicionnoe prikladnoe iskusstvo : nauchno-metodicheskoe posobie / V. F. Maksimovich. – Sankt-Peterburg : SPbGU, 2007. – 66 s. – Tekst: neposredstvenny`j.

4. Mixajlova N. N. Obuchenie bakalavrov v usloviyax integracii tradicionny`x i mashinny`x texnologij xudozhestvennoj vy`shivki / N. N. Mixajlova, A. M. Rastorgueva – Tekst: e`lektronny`j // Tradicionnoe prikladnoe iskusstvo i obrazovanie : e`lektronny`j zhurnal. – Sankt-Peterburg, 2022. – № 2 (41). – S. 160-175. – URL: [https://dpio.ru/stat/2022\\_2/2022-02-20.pdf](https://dpio.ru/stat/2022_2/2022-02-20.pdf) (data obrashheniya: 20.05.2025).

5. Prokleivanie tkani dlya vy`shivaniya flizelinom : master-klassy` // Grejs. Kod vy`shivki : sajt. – Tekst e`lektronny`j. – URL: <https://gracebysasha.ru/flizelin> (data obrashheniya: 02.05.2025).