МЕТОДИЧНІ АСПЕКТИ ПОБУДОВИ ЗМІСТОВОГО МОДУЛЯ «ІНФОРМАЦІЙНІ ТЕХНОЛОГІЇ НАВЧАННЯ ВИГОТОВЛЕННЮ ВИШИТИХ ВИРОБІВ» ДЛЯ УЧНІВ 5-9 КЛАСІВ

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У статті розглянуто методичні аспекти змістового модуля «Інформаційні технології навчання виготовленню вишитих виробів у трудовому навчанні», програму якого укладено відповідно до освітніх програм підготовки здобувачів освітнього рівня «бакалавр» спеціальності 014.10 Середня освіта (Трудове навчання та технології).

Зазначено, що необхідність удосконалення методики використання інформаційної технології навчання учнів виготовленню виробів на уроках трудового навчання обумовлює потребу в подоланні низки суперечностей теоретико-практичного та організаційно-технологічного характеру між: динамічною інформатизацією сучасної освітньої галузі та недостатнім урахуванням технологічною галуззю освіти динамічного розвитку сучасної інформаційної технології; необхідністю забезпечення інформатизації технологічної освіти учнів на уроках трудового навчання та недостатньою розробленістю науково-методичних засад упровадження інформаційної технології як засобу розвитку творчих технологічних умінь учнів із виготовлення вишитих виробів; доцільністю використання тенденцій розвитку інформаційної технології у вітчизняному та зарубіжному освітньому просторі та недостатнім рівнем підготовленості вчителів трудового навчання до її застосування в трудовому навчанні учнів; зростаючими потребами суб'єктів технологічної освіти до реалізації інформатичних навчальних моделей особистого розвитку з урахуванням їхніх пізнавальних інтересів і потреб та існуючими традиційними методичними підходами в трудовому навчанні учнів виготовленню вишитих виробів.

Узагальнено інформацію щодо практичного значення дослідження, яка полягає в розробленні та впровадженні в трудове навчання учнів 5-9 класів закладів загальної середньої освіти змістового модуля «Інформаційна технологія виготовлення вишитих виробів», організаційно-методичного забезпечення для вчителів трудового навчання та технологій. Представлено діагностичні елементи методики виявлення ефективності використання інформаційної технології трудового навчання учнів, адресовані вчителям трудового навчання та технологій для впровадження пропонованої моделі навчання учнів виготовленню вишитих виробів. Констатовано, що результати можуть бути використані під час професійно-педагогічної підготовки здобувачів вищої освіти спеціальності 014.10 Середня освіта (Трудове навчання та технології), підвищення кваліфікації вчителів трудового навчання та технологій у закладах неперервної педагогічної освіти. Науково-теоретичні положення з розкриття шляхів упровадження

інформаційної технології виготовлення вишитих виробів рекомендовано використовувати для розробки навчально-методичного забезпечення модельних навчальних програм «Технології. 5-6 класи» у закладах загальної середньої освіти, в системі діагностики якості трудового навчання учнів та моніторингу їхніх навчальних досягнень.

Ключові слова: *методика, інформаційна технологія, інформаційна культура, вишиті вироби, технологічна освіта, трудове навчання.*

Formulation of the problem. At the current stage of education development, an active search is underway for the most important competencies that combine cognitive, creative, personal, and technological skills necessary for the successful functioning of a person in the information space. The development of these skills requires innovative approaches in the use of educational information technologies, which are increasingly gaining importance in the organization of the learning process of students in institutions of general secondary education. This makes the issue of the use of information technology for the education of students during school subjects, including in labor training lessons, relevant.

The guiding principles of the implementation of educational information technologies are defined by the Constitution of Ukraine, the Laws of Ukraine «On the National Informatization Program» (2022), «On Education» (2017), «On Comprehensive General Secondary Education» (2020), etc. These regulatory and legal documents put forward a requirement for high-level formation of information activities of education seekers, combining traditional and innovative means of using information. First of all, this covers the educational activities of students, who must be prepared for the effective search and use of information technologies both in education and in everyday life. Such training requires the modernization of the traditional content of the subject, including labor, education of students, the introduction of the latest information technologies of education and the formation of students' readiness for their mastery. With the introduction of the key information and communication competence into the State Standard of Basic Secondary Education (2020), teachers of labor training should be prepared to use information technology to teach students to make designed products.

These provisions are especially significant for students of grades 5-9, who use information technology to master the design and manufacture of products, and show their personal creativity against the background of a teenage desire to learn about the environment. Having wide possibilities for solving this multifaceted task, the modern technological branch of education needs a theoretical justification of innovative models of the method of using information technology for teaching students to make various, including embroidered, products in labor training classes.

The advantages of using information technology in subject school education are well-known, providing students with dialogic knowledge of objects and processes of reality, facilitating control over learning and development of students, increasing cognitive activity and developing students' creative abilities, teaching them to independently determine the scope, duration and pace of educational activities.

All this puts forward new requirements for the training of subject teachers for the use of information technology for teaching students. At the same time, the analysis of the practice of work training teachers indicates that a significant part of them are insufficiently prepared for the use of information technologies in their professional and pedagogical activities, requiring significant improvement on the basis of personal educational goals and a holistic psychological and pedagogical concept, and the task of using information technology to teach students to make embroidered products in labor training classes has not been the subject of special research until now.

Analysis of recent publications and research. The use of information technology in education is studied by domestic and foreign scientists in the directions of improving education in the course of the formation of the information society (N. Bibik, A. Gurzhii, I. Zyazyun,

V. Kremen, V. Lapinsky, V. Madzigon, etc.), revealing the essence of technologies training (A. Nisimchuk, O. Savchenko, V. Sydorenko, I. Smolyuk, A. Tsina, etc.), the use of information technology in the educational process (V. Bykov, R. Gurevich, Yu. Doroshenko, M. Zhaldak, N. Kobernyk, M. Korets, V. Sydorenko, V. Steshenko, D. Thorzhevsky, V. Tytarenko, A. Tereshchuk, etc.).

The purpose of the article. Pedagogical substantiation of the effectiveness of the method of using information technology in teaching students to make embroidered products in labor training classes.

Presenting main material. One of the leading trends in the development of modern education, as well as society as a whole, is its informatization, which is based on the introduction of new information and communication technologies, improvement of scientific and methodological support of the educational process (Близнюк, 2017; Сороко, 2021). Informatization of education is one of the most important means of implementing a new educational paradigm developed on the basis of the concept of informatization of professional education of a specialist.

Its main provisions include:

1. Continuity and continuity of information training.
2. Systematic approach to education.
3. Formation of the information pooltours
4. Mastering new technologies.

The solution to the set tasks begins with the professional training of teachers.

It is very important for the future teacher to have not only fundamental knowledge in the chosen educational field, but also to be competent in the field of modern information and communication technologies, able to interpret and adapt them for the addressee; capable in the conditions of the development of science and changing practice, to re-evaluate the accumulated experience, analyze their capabilities, being able to acquire new knowledge, using modern educational technologies (Баловсяк, 2006; Балакірова, Павленко, 2012). Therefore, the formation of the information competence of the future teacher becomes one of the main tasks of the institution of higher education. A teacher in a high-tech environment is not only a source of information – he contributes to students' understanding of the learning process itself: assimilation of knowledge gives way to the ability to use information, obtain it with the help of a computer. change the structure and methods of his work outside of class (self-improvement, accumulation and systematization of information, preparation for lessons, etc.) and directly in class. Moreover, changes in the conditions and forms of work force us to rethink the role of the computer itself and the organizational forms of education to a very large extent. For this reason, the development of scientific and methodological support for the use of information technologies in the educational process becomes relevant.

The possibilities of information technologies can be widely used within the problem-based method of learning, when solving problems of a problematic nature (Ray, Suman, 2016). The main goal here is to maximize the activation of students' cognitive activity. The learning process involves solving various classes of tasks based on the acquired knowledge, as well as extracting and analyzing a number of additional knowledge necessary to solve the problem (Волкова, 2018). At the same time, an important place is given to the acquisition of skills in the collection, organization, analysis, and transfer of information, as well as the use of software products in solving tasks of a certain topic.

The research method of education involves studying the methods of objects and situations in the process of influencing them. A responsive environment is necessary for success (Rozgon, 2019). In this regard, modeling is an indispensable tool, that is, a simulated representation of a real object, situation or environment in dynamics (Трач, 2017). Computer models have a number of serious advantages over models of other types due to their flexibility and versatility (Arbogast, 2019). The use of a computer makes it possible to transfer time-consuming operations to devices

working with greater productivity, helps in many ways to facilitate calculations, to simulate actions that are expensive, dangerous or simply impossible in the real world.

The improvement of the method of using information technology for teaching students to make products in the lessons of labor training determines the need to overcome a number of contradictions of a theoretical-practical and organizational-technological nature between:

– dynamic informatization of the modern educational sector and insufficient consideration by the technological branch of education of the dynamic development of modern information technology;

– the need to ensure the informatization of students' technological education in labor training classes and the insufficient development of the scientific and methodological foundations of the introduction of information technology as a means of developing students' creative technological skills in the production of embroidered products;

– the expediency of using trends in the development of information technology in the domestic and foreign educational space and the insufficient level of preparation of teachers of labor education for its application in the labor education of students;

– the growing needs of subjects of technological education for the implementation of computer educational models of personal development, taking into account their cognitive interests and needs, and the existing traditional methodical approaches in the labor training of students in the production of embroidered products.

The study program of the content module «Information technologies of training in the production of embroidered products in labor training» is concluded in accordance with the educational programs of training for the holders of the educational degree «bachelor» in the specialty 014.10 Secondary education (Labor training and technologies).

The subject of the study of the content module is the organizational and pedagogical principles of the method of using information technologies for teaching students to make embroidered products in labor training classes.

Interdisciplinary connections: pedagogy, psychology, the basics of pedagogical skill, theory and methodology of technological education.

The purpose of the content module: to teach future teachers how to use information technologies to teach students how to make embroidered products in labor training classes.

The task of the content module: to reveal the pedagogical content and structure of information technologies of education; master the basic concepts in the context of the modern development of technological education and available domestic and foreign experience the use of information technologies in pedagogical practice; to master the method of using information technologies for training students in the production of embroidered products in labor training classes; to study the organizational and methodical support, to master the peculiarities of the application of information technologies in the labor training of students in the production of embroidered products and the peculiarities of their application in institutions of general secondary education.

The information volume of the academic discipline includes 4 content submodules and 6 topics:

Content submodule 1. Implementation of the idea in the production of embroidered products according to the algorithm of design and technological activity.

Topic 1. Search, collection and analysis of information and its arrangement

Technologies of archival storage of information. Ability to transfer, access and refer users to a centralized data bank. The website «Labor training» (http://trudove.org.ua).

Electronic information search technologies. Means of automated information and search systems for searching and collecting data on information resources of the global computer network. Existing social search engines. Adaptation of search activity to the subject of design and production of embroidered products and the author's origin of information.

Mixed learning technology as a means of integrative use of the Internet in labor training for the production of embroidered products using online resources. Use of Web resources and Web

pages and online forums. Stages of the implementation of the technology of mixed learning of the production of embroidered products: an initial face-to-face session or training in educational workshops of ZZSO on the formation of basic knowledge, detailing the content of individual topics on the production of embroidered products; independent study of the techniques of making embroidered products and communication of the participants of the educational process in online mode by means of information technologies of education.

Topic 2. The use of digital devices and graphic editors in the process of designing embroidered products

Technology of computer visualization of information of educational material on the production of embroidered products in the virtual and real world. Motivation of students, and presentation of educational material by teachers in a convenient visualized form. Methods of visualization of initial information on the production of embroidered products: graphs, diagrams, reference abstracts and logic-content models.

The technology of educational experimentation to bring students to the understanding of modern methods of design and production of embroidered products. Components of phenomena studied by students: frontal experiments, creative tasks, implementation of knowledge in project-technological activities, virtual experiments and observations, experimental tasks and extracurricular activities.

Virtual modeling technology for studying a simulated or real situation to determine its general and specific qualities. Modeling of embroidered products. Organization of cognitive activity of students from research on models of real existing compositions of embroidered products and creation of models by students themselves. Pedagogical software tools for performing laboratory studies, which are carried out by means of virtual simulation.

The technology of virtual design of embroidered products as a means of detailing and concretizing the design and technological activity of students. Virtual computer design for visualizing the design of an embroidered product on a computer, smartphone or tablet monitor without first manufacturing it.

Technology with the use of graphic packages with the use of universal office application programs and information technology tools during the work of students on the design and production of embroidered products in labor training classes. Graphics packages in the educational field: AutoCAD and Adobe Photoshop. Raster and vector graphic editors. Creation, processing and storage of models of embroidered products and their graphic images using a computer graphics system.

Topic 3. Application of digital devices and graphic editors in the process of presentation of projects of embroidered products

Multimedia technologies for creating a collection of texts, graphic images and other data with audio and video accompaniment, animations and other types of visual effects. The use of multimedia pedagogical software tools that provide individualization, motivation, activation and a comfortable learning environment for students to make embroidered products. Electronic training manuals, demonstration materials, laboratory and practical works, tests.

Technologies for automated monitoring of students' educational achievements in embroidery as an integral component of modern pedagogical software tools. The use of hypertext technologies to improve the quality of students' assimilation of educational material on the production of embroidered products by means of controlling educational and methodological materials. Diagnostics of educational achievements of students in embroidery by means of dynamic hypertext.

Technologies for preparing presentations on the formation of the qualities of independent researchers of embroidery in the participants of the educational process. Applied programs and means of preparation ofcomputer presentations. Complexes of standard software from a touch board and a multimedia projector. Using the presentation of embroidery projects in the form of slides, video recordings of lessons, and electronic beginner's guides.

Three-dimensional graphics technologies for operating screen models in a virtual three-dimensional space. Three-dimensional graphics programs: Kompas-3D, automated design system Auto-CAD, PRO 100, etc. Obtaining 3-D images of embroidered products by creating a three-dimensional mathematical model, constructing corresponding projections and displaying the obtained images on a display or printer.

Content submodule 2. Creative application of traditional and modern technologies of decorative and applied art

Topic 1. Search, analysis, generalization, processing, dissemination and application of information about types of decorative and applied arts in digital environments using digital devices

Augmented reality technologies for supplementing reality with virtual components by integrating real objects and embroidery processes into a virtual environment in real time using 3D technologies. A recognition system for identifying embroidery objects and processes in physical space and in real time, decomposing them into geometric lines, shapes, and bodies. The use of augmented reality in the form of 3D animations to obtain additional initial information and visual illustrations of the initial material for the manufacture of embroidered products.

Virtual reality technologies for the implementation of artificial computer visualization of the initial material on the manufacture of embroidered products, which are subject to study in the virtual world to transform the real world. Online means of information technologies in the form of electronic initial editions for the use of virtual models in real-time training and independent work of students. Creating the illusion of a user's continuous stay among the objects and processes of the virtual world using virtual reality.

Web 2.0 technology as a type of electronic training in embroidery for the formation of knowledge by means of joint and informal educational activities, the transfer of acquired experience by students and its preservation in the network environment of open resources: in blogs, social networks, collective encyclopedias, video and audio hosting. Designing an interactive information environment for educational interaction and information exchange of all participants in the learning process. Creation and distribution of own educational content on the Internet.

Technologies of virtual museums and exhibitions on the use of Internet resources in labor training. Sets of electronic artifacts and information resources (graphic images, text documents, audio and video recordings, interviews) in the form of file services. Virtual museums and exhibitions in the form of Websites for presenting expositions of museum-exhibition real and virtual materials from embroidery.

Content submodule 3. Effective use of equipment and materials without harming the environment

Topic 1. Analysis, operation of information on the selection of materials and production of embroidered products using digital devices

Immersive technologies as means of integration of virtual and physical environments, interaction with mixed reality, which combines augmented (AR) and virtual (VR). Creation of a comfortable educational space for the use of virtual (VR) laboratories for conducting experiments by participants in the educational process in a virtual environment with augmented reality. Creation of realistic three-dimensional impressions of the development of embroidered products, visualization of their drawings and schemes, creation of conditions for carrying out virtual trips and excursions to museums and exhibitions of embroidered products.

Technologies for managing educational equipment by means of tactile performance of management actions using information technologies (interactive whiteboards, sewing and embroidery machines, etc.). Motor-motor actions of the hands during arbitrary management of informational means of learning and work.

Technologies for performing training exercises using electronic textbooks, study guides, pedagogical software, network and multimedia courses. Using virtual simulators to create the illusion of real-time immersion in the direct manipulation of objects and processes in a simulated

educational space. Interactive interaction with objects and processes to be studied. The danger in using virtual simulators is to replace the real life of students with a virtual one.

Content submodule 4. Taking care of one's own life, satisfying one's own needs and the needs of other people

Topic 1. Search, selection and operation of information on operation and care of embroidered products using digital devices

Technologies of interactive dialogue using interactive dialog hypertexts Organization of individual, pair and group types of project-technological activities for operation and maintenance of embroidered products. Development of critical thinking based on the analysis of information received from the teacher and found by the students themselves. Stimulation of students' mental activity while providing advice for students' independent work.

Mobile learning technologies using mobile phones, laptops, players, etc. Mobile learning using presentations, video recordings of lessons, electronic teaching aids, access to electronic libraries, etc. Individual planning by students of the process of learning the rules of operation and care of embroidered products according to their own educational trajectories based on the use of visual, motor and auditory memory.

Web quests of labor training lessons in the form of a role-playing game using information resources of the Internet, own knowledge and experience in communication with other participants during the performance of tasks on the development of rules for the operation and care of embroidered products. The combination of game and project learning technologies by means of Web technologies. Types of tasks of Web quests: transfer of collected and processed information by students; compilation of information collected from various sources; problematic tasks, the solution of which requires the synthesis of information from various sources by eliminating false solutions.

Means of diagnosing the success of studies:

– *theoretical:* oral answer, participation in educational dialogue, answer to a problematic question posed by the teacher, performance of tasks in the structure of lectures, assigned for independent study, familiarization with state documents, etc., annotated answer to self-training questions, a synopsis of primary sources for one of the topics of the content module, an abstract of the scientific literature read on the topic of the module, a bibliographic index of scientific articles on the disclosure of current problems in the use of information technologies in teaching the manufacture of embroidered products, a synopsis on the topic of the module, which is not included in the content of the curriculum, writing control module works;

– *practical:* performance of practical research exercises and tasks, participation in modeling the pedagogical situation, solving problem situations, performance of written works, terminological dictation, performance of test tasks;

– *creative:* participation in the work of a scientific creative group, individual research experimental work, participation in Olympiads, writing and defending an essay, preparing a scientific publication, speaking at a conference, making visual material (schemes, diagrams, tables) for practical and laboratory classes.

According to normative documents, the future teacher of technology must be ready for the wide use of information technologies in the framework of project activities aimed at the creation (artistic construction/projection/design) of artistic products, including decorative and utilitarian purposes (Терещук, 2016; Титаренко, 2020). We are offered to consider a system of educational artistic design (design) based on the use of computer graphics (Vakulenko, Blyzniuk, Debre, 2022). This approach will allow students to successfully cope with educational tasks and project works related to artistic processing of materials and prepared for work with schoolchildren.

The fundamental basis of the proposed system of artistic design is the traditional methodology of artistic design. In particular, it is known that work on any project is carried out in stages. The main traditional stages of artistic design are: exploratory (pre-design research), artistic and design search (preliminary sketching), development of a sketch project, drawing up

design and construction documentation, production of a prototype or model in natural materials. Each of these stages, along with the traditional form of presenting information, can be performed on a computer.

At the search stage, information on the experience of designing and using the product being developed is collected and systematized. The results can be presented in the form of illustrated tables that can be prepared in computer layout programs (InDesign, QuarkXPress, Adobe PageMaker), as they are more convenient for systematizing voluminous graphic material than text editors.

As part of the pre-design research, prototypes (already created samples) of the product are also studied, which are critically evaluated from the point of view of modern consumer and production requirements and all the features of their artistic and design solution: the technological requirements are clarified (the main design parameters of the product that ensure its strength are studied, reliability, durability, an analysis of the schemes of various structures is carried out, rational materials are selected and a decision is made regarding the types of artistic processing of the material, the economic prerequisites of creation are considered, ecological aspects are studied (the environmental friendliness of the manufacturing process is analyzed, the ecological interaction of the artistic product with the environment, people), ideas are formed about the aesthetic and artistic requirements of possible consumers and the possibilities of their improvement.

Features of the Microsoft program PowerPoint has already been widely described by other teacher-researchers, so we found it necessary to pay attention to the possibilities of using Adobe Premiere and Macromedia Flash. At this stage, the development of sketches is already non-research and analytical in nature, but constructive and exploratory. Layouts allow you to check the compositional solutions of artistic and decorative products in the conditions of a real interior, the correctness of the light frame of the product and the organicity of its plasticity, volumetric and spatial qualities of the composition. A greater number of graphic techniques and manual layout techniques have been replaced by the capabilities of special computer programs. A number of specific sketch proposals regarding the design, layout, and decoration of the future product are produced, the best of which will be selected for detailed final development at the next stage; a work strategy is formed: selection of software tools and methods.

When preparing project materials, we recommend carefully analyzing and selecting software tools that are minimally necessary for quick and high-quality execution of a template sketch in advance.

When preparing search sketches, you cannot do without the artistic capabilities of such powerful bitmap editors as Adobe Photoshop and Corel Painter. These editors need to create «from scratch» artistic sketches of a certain direction, need creative improvisation in execution. For example, clothing modeling (development of silhouette, composition, color, etc.), sketches for batik (technique using reserve liquid, urea salt; free painting technique on moistened fabric; painting technique using hot paraffin), engraving on wood (xylography), metals (chemical and electrochemical etching of complex plot compositions (architecture, urban and rural landscapes, animalistic images, multi-figure compositions, portrait, etc.), linocut (engraving on linoleum), contour carving on wood, etc. Raster editors are also necessary for preliminary processing presentation material, retouching images, creating collages, preparing textures for three-dimensional modeling, etc.

In the framework of educational design at technological faculties, it is also permissible not to perform mock-ups in the material in order to save educational time. During the design search, we presented embroidered products with three-dimensional virtual models that can be successfully executed in KOMPAS, 3D Studio Max (3ds max) or Maya, which are very effective and flexible for the purposes of search modeling, which have huge possibilities for creating drawings and three-dimensional models of any level of complexity and photorealistic visualization.

KOMPAS is a domestic system of automated design, the product KOMPAS-GRAPHIC is the only system of automated design that has a certificate of an information and software tool for educational purposes, which allows you to recommend using this program in the context of artistic design. In addition, the experience of using the KOMPAS system gives students valuable knowledge and skills that are necessary for work in modern production in a digital design environment, which must be communicated to the younger generation in accordance with the current level of development of science and technology.

We recommend using Poser to create anthropomorphic models, and Bryce3D to create realistic landscapes (when preparing exterior projects related to an open landscape). Poser's anthropomorphic models can be useful when analyzing the ergonomics, proportions and dimensions of a product.

Elements of ergonomic analysis and practical operation of the product can be presented using the capabilities of 3D (three-dimensional) animation in 3ds max and Maya. In some cases, for modeling three-dimensional forms, you can use the capabilities of two-dimensional graphics programs, for example, the graphic editor CorelDRAW or Adobe Illustrator, aimed at developing a sketch project.

In the special literature, the final creative proposal of the designer is called a sketch project, which fully defines all the characteristics of the future art product. Before the advent of the era of widespread use of computers in design, according to classical requirements, the graphic part of the project, as a rule, consisted of a «main» tablet indicating the topic of development, various schemes, orthogonal views of the product, sections, a perspective image, a model of the product or interior, exterior composition or building, landscape design, etc., explanatory note.

We recommend developing the drawings necessary for the execution of artistic products in KOMPAS (KOMPAS-GRAFIK LT and KOMPAS-3D LT), AutoCAD, or CorelDRAW, Adobe Illustrator, or in any other programs that at least provide the ability to accurately set dimensions. When preparing a sketch project, we suggest replacing the perspective image with a computer analogue - three-dimensional images created in Maya or 3ds Max, or other three-dimensional modeling programs, etc. The next stage, which can also be the final stage in educational design, is skarrangement of design and construction documentation. At this stage, drawing and design documentation and working drawings necessary for the creation of the product are produced. When developing products of applied art, overall drawings, sections and templates are mainly performed. Detailed drawings are usually not used. It should be noted that drawing up design and construction documentation is not mandatory when developing educational projects, since educational and experimental works, as a rule, are aimed at creating a single author's product and are not intended for replication in mass production conditions.

Conclusions. The practical significance of the research lies in the development and implementation of the content module «Information technology for the production of embroidered products» for students of grades 5-9 and organizational and methodological support for teachers of labor training and technology in the labor training of students of general secondary education institutions. The presented diagnostic elements of the methodology for identifying the effectiveness of the use of information technology in the labor training of students are addressed to teachers of labor training and technologies for the implementation of the proposed model of training students in the production of embroidered products. The results can be used during the professional-pedagogical training of students of the specialty 014.10 Secondary education (Labor training and technologies), professional development of teachers of labor training and technologies in institutions of continuous pedagogical education. It is advisable to use scientific-theoretical provisions on the disclosure of ways of implementing information technology for the production of embroidered products for the development of educational and methodological support for model training programs «Technology. 5-6 grades» for institutions of general secondary education, in the system of diagnosing the quality of students' work training and monitoring their educational achievements.

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METHODICAL ASPECTS OF THE CONSTRUCTION OF THE CONTENT MODULE «INFORMATION TECHNOLOGIES FOR TEACHING THE PRODUCTION OF EMBROIDERED PRODUCTS» FOR 5-9-GRADERS

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The methodical aspects of the content module «Information technologies for teaching the production of embroidered products in labor training» were considered. Its study program is drawn up in accordance with the educational programs of training for holders of the «bachelor» degree majoring in specialty 014.10 Secondary education (Labor training and technologies).

It is noted that the need to improve the method of using information technology for teaching students to make products during labor training lessons determines the need to overcome a number of contradictions of a theoretical-practical and organizational-technological nature. They are the following contradictions between: dynamic informatization of the modern educational field and the technological field of education that does not take into account the dynamic development of modern information technology; the need to ensure the informatization

of students' technological education in labor training classes and the insufficient development of the scientific and methodological foundations of the introduction of information technology as a means of developing students' creative technological skills in the production of embroidered products; the expediency of using trends in the development of information technology in the domestic and foreign educational space and the insufficient level of preparation of labor training teachers for its application in the labor training of students; the growing needs of the subjects of technological education for the implementation of computer educational models of personal development, taking into account their cognitive interests and needs, and the existing traditional methodical approaches in the labor training of students in the production of embroidered products.

The information is summarized that the practical value of the research consists in the development and implementation of the content module «Information technology for the production of embroidered products» for 5-9-graders and organizational and methodological support for teachers of labor training and technology in the labor training of students of general secondary education institutions. The presented diagnostic elements of the methodology for identifying the effectiveness of the use of information technology in the labor training of students are addressed to teachers of labor training and technologies for the implementation of the proposed model of training students in the production of embroidered products. It is noted that the results can be used during the professional and pedagogical training of students majoring in specialty 014.10 Secondary education (Labor training and technologies), professional development of teachers of labor training and technologies in institutions of continuous pedagogical education. It is advisable to use scientific-theoretical provisions on the disclosure of ways of implementing information technology for the production of embroidered products for the development of educational and methodological support for model training programs «Technology. 5-6 grades» for institutions of general secondary education, in the system of diagnosing the quality of students' work training and monitoring their educational achievements.

Keywords*: methodology, information technology, information culture, labor training, embroidered products, technological education.*