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**IMPLEMENTATION OF INNOVATIVE EDUCATIONAL
TECHNOLOGIES INTO PROFESSIONAL TRAINING OF SKILLED
WORKERS FOR CLOTHING MANUFACTURE**

Odessa, Ukraine

Abstract. *The article considers the current state of the use of new educational technologies in training future skilled workers for clothing manufacturing in the system of vocational education in Ukraine. There are highlighted and determined the foundations of the latest educational technologies for training future professional workers of clothing manufacture using modern computer technologies, which allows to introduce into the educational process modern innovative programmes, disciplines and objects. Computer-aided design, constructing, modeling, drawing clothes as a means of intensifying the formation of future tailors and cutters' constructing abilities, knowledge, skills, which provide the conditions for the transition of workers training quality to the level of the development of the modern world industrial clothing manufacture.*

Keywords: *innovative educational technologies, clothing manufacturing, computer clothes projecting, computer clothes designing, computer clothes modeling, professional training of future tailors and cutters, design skills, system of vocational technical education of Ukraine.*

Modern clothing manufacture of Ukrainian light industry needs intensification of the process of clothing manufacturing, which is caused by the increasing demand for new models of clothes. Therefore, the need for qualified workers who have mastered the latest modern knowledge with established design abilities has been significantly increasing, especially in the conditions of contemporary world's economy development trends. The process of formation of of the future tailors and cutters design skills is one of the most important factors, which is an integral part of training future skilled workers for light industry.

New technologies and modern approaches to professional training future tailors and cutters for clothing manufacture in the system in vocational technical education of Ukraine will be given the first priority to highlight the steps to update the content and tools of teaching.

The use in educational process of training tailors and cutters of modern computer technologies - computer-aided projecting, designing, modeling, drawing of clothes, leads the level of formation of design skills development onto the quality, which can fully meet the needs of modern clothing manufacture. The intensification of the process of formation of design skills should take place primarily at the level of training qualified workers in vocational technical schools, i.e. at the first steps of movement in the direction of professional formation of the youngster.

Vocational education of Ukraine is slowly approaching contemporary world educational standards due to the integration with European educational

processes. Step-by-step education throughout all life is the main trend (perspective) of modern education system. The rapid development of science and technology in the use of new technologies, materials, equipment, causes high mobility and commitment to the implementation of new technologies in the teaching process. Firstly, it is the use of computer technologies at every level of training skilled workers, particularly in occupations connected with manufacturing.

Modern clothing manufacture is impossible without computerization of processes, i.e. the use of computer-aided designing, engineering, modeling, drawing clothes for complex automation of clothing manufacturing processes. It is the quality of professional training, the contemporaneity and timeliness of workers' knowledge that determine their competitiveness in the labor market in conditions of European integration processes.

The system of vocational schools (lyceums, colleges), which provide training workers for clothing manufacture of light industry is both outdated and largely behind the leading technical tasks that are solved by the companies of clothing manufacture of Ukraine. Reforming and modernization are inevitable. The transition from industrial to information society, implies the implementation of certain qualification requirements for workers within specific occupations. First of all they should know and use in the process of task-solving modern computer and informational technologies.

Driving forces and factors which already now should change this difficult situation will be discussed in the article.

The analysis of recent research and publications reveals that the stated problem at the level of training skilled workers for clothing manufacture has been poorly explored, but some aspects were highlighted in the works of the following authors: computer-aided designing of clothes in CAD «JULIVI» (L.Z Tarhan, Z. N. Sedaymetova); training engineers-educators of clothing manufacturing profile (G. Umerova, O. Tokareva, N. Alexandrova, A. Fedotova); the use of computer-aided teaching systems in education of future engineers-pedagogues (T. Bondarenko); the formation of professional competence of future designers by means of computer technologies (A. Kopyl); the formation of professional skills of junior professionals-designers in the process of professional training (Z. Makar); computer-aided clothes designing (M. Kolosnichenko, V. Shcherban', K. Protsyk et al.).

An important component of the level of manufacture development is the intensification of the future tailors, cutters, designers, engineers' knowledge, skills and aptitudes formation by means of computer-aided constructing and designing using CAD systems. In the next 5-10 years, the share of design and research work in most areas of industry is going to increase by more than 30%.

The problem of professional training at the level of skilled workers is in the fact that the resource of computer-aided designing, engineering, modeling, drawing clothes isn't used, and this theme is almost completely unexplored. In this regard there occur some contradictions: between the needs of today's

clothing industry for skilled workers, junior specialists, with well-formed design knowledge and skills with the use of computer technologies and the availability of qualified teachers of disciplines, new subjects, elaborated programs, mastered methods and educational technologies for performing their training. The above-mentioned contradictions have determined the choice of the research topic: "Implementation of innovative educational technologies in professional training of skilled workers for clothing manufacture in Ukraine".

An important task is to search for contemporary approaches to the organization and application of effective training of skilled workers in the system of vocational technical education of Ukraine. The article aims at defining, highlighting and elaborating the theoretical foundations of new educational technologies to provide professional training of future tailors and cutters of clothing manufacture using modern computer technologies.

New national standards of vocational technical education "Tailor" and "Cutter" became valid in 2013 and are targeted at training (skill upgrading) of workers in clothing manufacturing of light industry of Ukraine. Innovations coming from the state concern primarily the implementation of the step-by-step and module system of education in the educational process of training [4,5]. Passing each level is confirmed by assigning graduates with educational and qualification level of "skilled worker*" and "junior specialist**".

- 1 level*. Trade "Tailor" 2nd-3d category;
- 2 level*. Trade "Tailor" 4th category;
- 3 level*. Trade "Cutter" 4th category;
- 4 level*. Trade "Tailor" 5th category;
- 5 level**. Trade "Cutter" 6th category;
- 6 level**. Trade "Cutter" 6th category;
- 7 level**. Trade "Cutter" 7th category.

Table 1 – updating of the subject matter of professional and theoretical training of the "tailor" trade.

Subjects of professional and theoretical training of the trade “tailor”	
Standard	Recommended for implementation
Basics of designing clothes Special drawing Fabrics study Technology of clothing manufacture Clothing manufacture equipment Occupational safety and health	Computer-aided clothes modeling Computer-aided clothes constructing Special computer drawing Automated clothing manufacture equipment Computer-aided clothes designing (design technologies in the field)

The analysis of the content of new standards enables the following conclusions, that except for the step-by-step education according to the modular system, there is no more vector in the direction of the use of modern educational technologies. There are no tools, equipment or educational technologies

enabling students master more information, especially at the initial professional levels, which are necessary for creating competitive professional knowledge and skills. It is high time the standards immediately updated on account of the use of modern science and technology achievements, new pedagogical technologies.

During the last decade, the author of the article has created, developed and now is in state of testing by implementing in the educational process, new educational technology for training skilled workers of clothing manufacture – the use of computer technologies at every stage of learning, in every subject, at every lesson. As a teacher spetsdystyplin sewing area of training skilled workers within the variable content of training (can not exceed normative part of the training content of more than 20%), and the allowance of time for freely chosen subjects (GPs), always use alone in front of for the performance of students students and laboratory practical works, modern achievements of science and technology - aided design system of clothing (CAD).

As a teacher of special disciplines of clothing manufacture area of training skilled workers within the variable content of training (can not exceed normative part of the training content by more than 20%), and on the account of free time for freely chosen subjects (FCSs), we always use for students' laboratory and practical work performance modern achievement of science and technology – computer-aided designing (CAD).

The factor of intensifying the formation of designing skills is the use of new technologies by a teacher, which are based on the use of modern computer technologies: the creation and elaboration of electronic visual aids; designing and elaboration of electronic laboratory workshops; creation and elaboration of video lessons; performing theoretical lessons using computers and modern computer technologies; performing laboratory and practical work using modern software and advanced automated equipment; performing practical work using modern software and advanced automated equipment.

Does modern vocational school have enough teachers who have mastered these advanced educational technologies, modern computer technologies, and directly use them in their daily activities? Is there sufficient number of vocational technical schools having modern material and technical resources for training skilled workers for clothing manufacture? The answers to these two questions should have public Education Authorities, in a situation where they need this year to decide on reducing the number of schools that perform training (qualification upgrading) of skilled workers, tailors, cutters.

Odessa professional college of technologies and design is among the five best schools of Odesa region, it has a modern material and technical base, develops and uses modern educational technology in training skilled workers for clothing manufacture.

New subjects "Computer-aided clothes designing", "Computer-aided clothes modelling", "Fundamentals of computer special drawing" require immediate implementation of state standards for vocational technical education, as their normative part and should replace or supplement old subjects such as

"Basics of clothes designing" and "Clothes designing". Then the intensification of the process of forming design skills will meet the current trends of the development of vocational education at the level of production requirements. Computer-aided clothes designing is one of the important stages of automated computer-aided clothes designing, and unlike designing in manual mode it increases the efficiency of the process of creation and elaboration of new models of clothes tenfold.

So, the current definition of "*professional training of future tailors, cutters of clothing manufacture using computer technologies*" – is organized and purposeful process of obtaining and improving the knowledge and skills necessary to perform professional tasks by a tailor, cutter of clothing manufacture directly on a computer using automated equipment, accessories and special applied software (CAD).

Conclusions. Of particular importance for the training of future tailors and cutters is computer-aided clothes designing – that is drawings construction, blueprints, and production of curves according to the model and technical documentation directly on the computer using modern software and hardware.

In modern conditions of reforming vocational education of Ukraine, which are caused by global integration processes, competitive light industry and clothing manufacture would like to have the need for highly skilled and highly mobile workers met. Their training should meet the requirements of the best world educational technologies on account of implementing contemporary science and technics achievements to every level of professional and theoretical, professional and practical training.

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**METHODICAL BASES OF FUTURE ELEMENTARY SCHOOL
TEACHER'S MATHEMATICAL COMPETENCE FORMATION BY
MEANS OF INNOVATIVE TECHNOLOGIES**

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Abstract. *Experimental model of a future elementary school teacher's mathematical competence formation by means of innovative technologies was characterized. Possibilities of educational process improvement by inclusion of electronic methodical complex "Training method of educational branch "Mathematics" in it made in platform Moodle were illustrated. Creation of necessary organizational and pedagogical innovative forms, methods and means of a future elementary school teacher's mathematical competence formation using conditions is indicated.*

Keywords: *mathematical competence, innovative potential of educational establishment, electronic platform Moodle, innovative environment, innovative pedagogical activity of a student and a teacher.*

Problem statement, its connection with important scientific and practical tasks. Implementation of a competence-based approach in organization of studying is getting important meaning in the context of the higher education reforming. There is a need in training of a teacher who is capable to form pupils' key competences according to new State Standard of the Primary general education (2011) and new curricula (2013). Due to the changes in educational branch "Mathematics" it is relevant to improve process of a future elementary school teacher's mathematical competence formation. An important step on the way to realization of a competence-based approach in the context of mathematical competence formation is, directly, involvement of means of innovative technologies into educational process.