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KNOWLEDGE ALLIANCE IMPROVING DIGITAL AND ENTREPRENEURIAL SKILLS OF TEXTILE AND CLOTHING ENGINEERS

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Introduction

The textile and clothing industry is traditional for Europe. It includes 176,400 companies, 99% of which are SMEs. It is in a huge need of human resources because a great part of them is expected to retire in the next few years. The development of the necessary competences and skills for existing workforce and attracting qualified young experts of the next generation has become a priority for the companies. The young people prefer ICT and are not aware that they are widely applied in the textile industry. This determines the tremendous need for engineers, especially those who can work with CAD, CAM, CAE and PLM systems. According to the existing university curricula the ICT and digital education as well as entrepreneurial education often is neglected. The analysis of the presented trends led to the idea to develop a European project, which main purpose is to develop a curriculum and syllabuses that meet the requirements (incl. digital and entrepreneurial competencies) of the business to the specialists working in the field of textile and clothing design and production.

Experimental part

The developed project titled "ICT in Textile and Clothing Higher Education and Business" was funded under Erasmus+ Program Key Action 2: Cooperation for innovation and the exchange of good practices. The following main steps in achieving the aim are foreseen: performing a gap analysis, development and conducting a pilot course, development of courses in all textile and clothing sectors as open information products and dissemination.

Results

At this stage, there are results from a survey conducted among 62 companies. It includes 84 questions, structured in 10 sections. The answers will help to specify the needs and requirements of the business.

Discussion

Comments and deep analysis of the obtained answers was made.

Conclusion

The training materials and courses developed under the project will be entirely practical, interactive and suitable for distance learning. They will be located on an open access web-platform.

Keywords: Information and Communication Technologies (ICT), Entrepreneurship, Interactive distance learning, Practical and selectable free accessed modules.

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KOTEL CARPETS - UPDATING TRADITIONS

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Introduction

Kotel carpets are one of the Bulgarian national symbols. They are known not only in the country but all over the world. Their production is kept till nowadays, although the number of people who produce them is rapidly declining. To help the cause of preserving traditions come modern methods such as digitization of patterns, development of electronic catalogues and their storage, engineering approaches and solutions for transformation of handmade patterns in manufacturing technologies, as well as other technological calculations.

Carpet weavers have an intuition based on their long-years' experience to estimate looking at the pattern how many warp threads to take and how many weft threads to lay in order to become a desired figure. The main goal of the research was to put their knowledge and skills on a scientific ground.

Experimental part

The present work briefly describes the handmade carpet weaving technology. Based on its principles, a methodology has been developed to determine the number of threads corresponding to a pattern cell. By input parameters: pattern, linear density of warp and weft threads and density of warp winding, the size of the finished woven carpet can be calculated. In case of existing carpet sample, conversely, the pattern can be restored, and the material parameters calculated.

Results

An expert computing module based on Excel spreadsheets to automate the calculations has been developed. It is worked out in 2 versions, depending on the applied weaving method: by pairs or by single warp threads.

Discussion

Well-known formulas have been used to recalculate the linear density into diameter. The need for periodic crossing of neighbour threads during the fabric formation is also taken into account, in order to avoid the formation of large hollow windows (ajour?), which can reduce the strength of the carpet.

Conclusion

Proposed methodology can be used successfully because it has been validated through a large number of experimental tests conducted with patterns and materials from the production range of BG Nuance.

Keywords: Kotel carpets, pattern, digitalization, automated engineering calculations.



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LEARNING AND CREATIVE ASPECTS OF DRAWING AS A STAGE OF DESIGN OF CLOTHING

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Abstract

1. Introduction

Drawing is an important, initial stage in the design and in general of the creation of clothing. You can say it is the most creative, the most essential. Drawing is the basis of all the arts associated with a vision. It expresses imaginative thinking in its purest form. Depending on the specific task and the area it serves, it may be different in nature.

Mastering and drawing the human figure is one of the difficult problems that must be solved when designing a clothing project. Its interpretation in this process has specific peculiarities and problems for solving in a purely creative and educational way.

Understanding the problems, opportunities and specific features in the construction of a clothing project is an important condition for successful creative development in a given field.

2. Experimental part

This study addresses the theoretical and practical problems associated with the creation of clothing projects, which are relevant not only to creative problems, but also to teaching, related to the understanding of the peculiarities and mastery of the necessary knowledge, skills, procedures, techniques, materials.

The different disciplines involved in the artistic construction of the project contribute differently to this. Better alignment between them is necessary for the common purpose.

3. Results and a Discussion

The specificities in the academic drawing and artistic execution of clothing projects, the tasks they solve, and issues related to their practical application and mastery are analyzed. Specific and more common problems related to successful creative and teaching practice in this field are indicated.

4. Conclusion

Thinking about and applying the problems involved can contribute to the more effective training and creative realization of students studying specialties related to fashion design and the design of clothing in general.

Keywords: drawing, fashion, clothing design, human figure.

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