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Research paper

Educational Programs of Universal Design for Preparation and Training of Personnel

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Abstract

The training of engineering and design personnel capable of taking into account the principles of universal design in their work will allow creating comfortable living conditions not only for people with disabilities in health, but also for certain categories of citizens by taking into account the needs.

Keywords: *Engineering educational program, training, body optimization*

1. Introduction

Universal design (UD) is a modern concept for the development of design, which consists in creating an environment that is comfortable for all social groups of population, including the disabled and people with limited mobility. Moreover, the formation of such an environment should be laid at the design stage, since a universal design involves the development of an environment that does not require subsequent adaptation for individual social groups. [1]

2. Principles of formation of educational programs taking into account the specificity of universal design

A quarter of a century ago, for the first time in Russia, the specialty Technology of Artistic Materials Processing (THOM) was created at the Department of Computer Design at MIREA. She combined engineering training (materials and technology) and design (artistic creativity and design). Over time, the specialty spread throughout Russia and today about 40 universities are part of the Scientific and Methodological Council (NMS) in this area of training. The development of state educational standards and curricula, an annual discussion of the results achieved, knowledge and skills at All-Russian and international scientific-practical conferences - all this makes it possible to develop, transform and modernize educational programs for training in universal design. [1-4]

In a market economy, representatives of employers and businesses want to see highly professional specialists - designers who are able to create residential, industrial and public buildings, products of light industry, transport, utilities, combining an accessible environment and equal opportunities for different segments of the population. This makes it particularly relevant to include new subjects in educational programs and curricula. The main task of the discipline courses is the study of patterns of artistic creativity and engineering design, the possession of modern methods of scientific research in the field of materials and technologies, understanding the laws of ergonomics, sociology and psychology, taking into account the requirements of universal design and the formation of a barrier-free environment.

Inclusion in educational programs and curricula in the areas of THOM and Design for bachelors and masters of disciplines directly related to universal design, namely: “Industrial design of a barrier-free environment”, “Universal design”, “Manufacturing technology of universal design products”, etc. , will allow to adapt educational and methodical complexes for the development of samples of product models and universal design devices. [5] Many higher education institutions conducting training in THM come to consider the concept of universal design. More and more there are course projects and final qualifying works related to universal design.

As an example, the projects of students and teachers of the Department of Computer Design of Moscow Technological University are presented (Fig. 1-3).

The presented projects clearly show the willingness and interest of future designers and technologists to solve issues arising in the design of universal design objects in those areas of human life where it is needed.

Fig. 1: The project on the equipment of garbage cans in the Moscow metro

Fig. 2: Problems of navigation and ergonomics in apartments

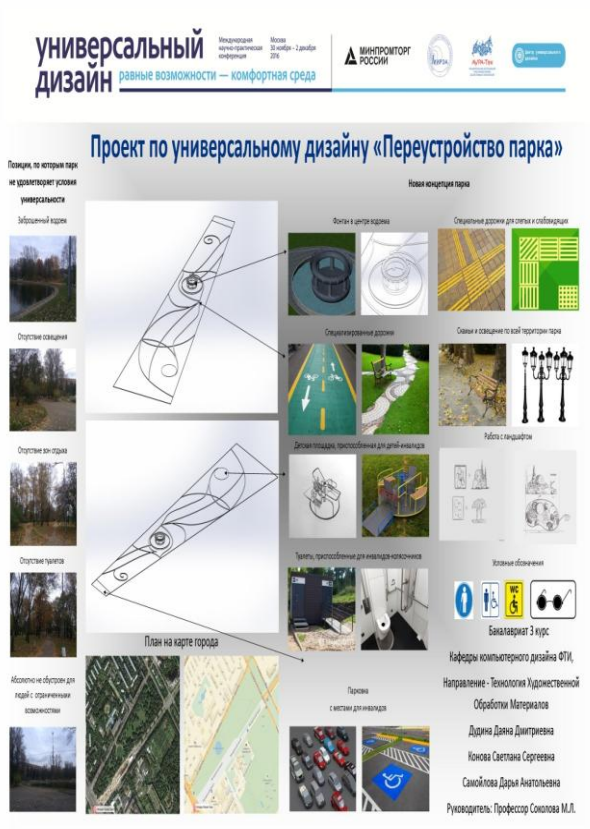

Fig. 3: The project on universal design "Reorganization of the park"

4. Conclusion

Therefore it is concluded that development of educational programs for students of specialized universities in the areas of THOM and Design will allow to structure and regulate the basic principles of universal design at all stages of the formation of the environment including: design, creation, operation.

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