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DEVELOPMENT OF PROFESSIONAL INTEREST IN DESIGN AND GRAPHIC ACTIVITIES IN FUTURE DESIGNERS

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Abstract

Modern changes in the social, economic, and educational structure of society pose new requirements for the professional training process. Students have to develop a set of cultural and professional competencies. The willingness of future specialists depends on deep special knowledge and creative abilities, motives, interests and attitudes to design activities. Admission to the university strengthens faith in own strengths and abilities. However, professional choice is often determined by random factors. This causes a lack of interest in learning, a negative attitude to the profession. During the adaptation, students experience difficulties, have a weak motivation for new areas of knowledge. Students have to do much homework lacking skills of independent work; it becomes difficult for them to combine lecture materials and practical exercises. They do not understand the disciplines and lose cognitive and professional interest in them. The elimination of these shortcomings is facilitated by an optimal learning process based on the development of a method for teaching design and graphic activities.

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Keywords: Motive, professional interest, design activities, graphics, self-determination, methodology.



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1. Introduction

Design and graphic activities are of particular importance in the professional development of future designers. This discipline is the main component of the curriculum "Design". The course is taught for students of all the years. At the first level, independence and creativity are developed. The need for professional self-determination and personality are formed as well. The student should have motives manifested in the desire to find a solution that will bring a maximum benefit to society.

Components of the personality's orientation play an important role: beliefs, ideals and ideas about life values. These are a professional interest which determines the individual's selective focus on a particular type of work, determining the search for a life vocation (Baptiste et al., 2018; Hidi & Harackiewicz, 2000; Meshkova, 2017; Palmer et al., 2017; Tapola et al., 2014).

The component is crucial in the training structure of future designers. The disciplines including this component contain new materials closely related to the future profession. Timely orientation of students to elimination of arising difficulties, interest in learning can be potentially developed. Having assimilated a significant amount of special knowledge and skills, students develop skills that are directly related to their profession – this is the purpose of the competency-based approach (Ekaterinushkina & Antonenko, 2019; Zhdanova et al., 2019).

2. Problem Statement

The problem of motivation development is studied by many authors in the context of professional self-determination of students as the most important category of the general development of an individual. (Ainley et al., 2005; Klimov, 1996; Pavlov & Pavlov, 2017).

However, even the conscious choice of profession does not guarantee the success of professional self-determination. It is necessary to create conditions for effective motivation development (Hidi & Renninger, 2006; Ilyin, 2011; Zhdanova et al., 2018). This problem is relevant, since professional interest is a leading motive for the professional development.

3. Research Questions

Design and graphic training play a significant role in developing professionals. In design activities, competencies, methods and means of their implementation are integrated. In addition, all stages of creative development (task settlement, information collection, studying analogues, searches, drafting, final completion of the project) require a complex structure for the interaction of the graphic image system with the project stages. The integral part of the conceptual design and design decisions is the use of various types of orthogonal, axonometric and perspective projections, models and 3D visualizations. The optimal methodology is aimed at increasing students' interest in academic work and development of professional skills.

One of the main psychological and pedagogical conditions for organizing and conducting the educational process is development of the positive motivation in students. Today, there is no exact definition of the term "interest". It is defined as a form of a personality orientation; an integrative personality trait; a category of self-determination in life and work.

We defined the professional interest as a category of personality development which has four stages of development: 1) development of professional intentions in high school; 2) development of sustainable interest in the university; 3) professional adaptation during internships; 4) professional self-realization in the workplace. Scientists have developed various methods for schools and universities (Ainley et al. 2005; Baptiste et al., 2018; Meshkova, 2017; Palmer et al., 2017). However, there are no methods for training future designers. This is an avenue for research on development of the professional interest in design students.

4. Purpose of the Study

The aim of the study is to develop professional interest in design and graphic activities in students. The purpose was implemented as part of the bachelor’s educational program “Design”.

5. Research Methods

The method for studying professional interest development in students has been developed. It involves the maximum closeness to the real profession by creating special conditions in which organization and operation principles can be reproduced.

The following tasks were set:

- development of positive motivation in educational design and graphic activities;
- formation of the need for professional self-determination;
- development of self-analysis skills;
- development of the need for creativity and heuristic solutions.

At the first stage, the first-year students were surveyed to identify emotional, motivational, intellectual, and volitional levels of the professional interest (table 1).

Table 01. Assessment Scale

Professional Interest Indicators	Low level	Medium level	High level
emotional	Passive or negative attitude towards the profession	Positive attitude, but some doubts when choosing	Positive attitude to the profession, complete satisfaction
motivational	Lack of motives for choosing the profession	Motives for choosing the profession	The presence of motives for choosing a profession, their specific focus
intellectual	Poor understanding of the profession, low self-esteem of professional readiness	Inaccurate understanding of the profession, self-assessment of professional readiness is slightly overstated	Accurate understanding of the profession, normal self-esteem of professional readiness
volitional	Volitional passivity, unwillingness to improve	Insufficient manifestation of volitional activity in improving professional activities	Manifestation of volitional activities in mastering the profession, the desire to improve

Table 02. Results

students	Levels of professional interest		
	low level	medium level	high level
first year	26,7%	50%	23%

First-year students experience a number of difficulties, doubting the correct choice of the profession, focusing on its prestige or idealizing ideas about it (Table 2).

The method is aimed at gradual development of students' professional interest by solving a series of interrelated tasks and assignments in educational cycles. The development of components of the interest is distributed across all sections of the design and graphic disciplines. Students did a specific task at different levels, seeing its solution from different points of view. This allowed us to consolidate the components and achieve a closer relationship between them.

The components of the training complex were divided into three stages according to the courses and blocks of disciplines, practical exercises (clauses), graphic assignments (drawings and technical drawings), design developments (course design, final work).

Stage I (first year) – general training (algorithms): the purpose is to lay the foundations of design and graphic activities. Disciplines: propaedeutics (basics of composition), engineering graphics, technical drawing, design (basic level), plastic modeling. The following algorithm is applied: mastering the sequence of decisions, working with tools, materials and techniques. Types of tasks: drawing, formal composition, formal layout.

Practical exercises are aimed at performing short individual tasks. The algorithm contributes to the development of an indicative basis of actions for solving problems, which leads to the successful formation of logical solutions and performance of reproductive activities. Adaptation to the design and graphic actions takes place. This develops students' creative abilities, identifies strengths and weaknesses of knowledge and skills. This stage solves the following tasks: instills culture of solving graphic problems; develops a set of sequential actions to solve design problems; ensures the assimilation of universal techniques for solving graphic and design problems. The results are comfortable adaptation to new activities; introspection of actions; development of cognitive interest.

Stage II (second and third years) – specialized training (interpretation): the goal is to ensure the transition from cognitive to professional interest, the involvement of students into active independent activities. Disciplines: design (term papers), design and graphic modeling, prototyping, computer technology, educational practice. The method of practical work is the possibility of interpretation – the transition from algorithms to decisions regulated by new cognitive landmarks. Problem management is mitigated. Types of tasks: first stage tasks performed taking into account new knowledge, heuristic tasks, designing.

Heuristic tasks are required. Students develop abilities and skills that are characteristic of the creative orientation of the individual, creativity in design concepts:

- tasks aimed at developing the ability to transfer knowledge and skills to new conditions, situations (combining well-known methods with new ones, constructing decision algorithms) – combinatorics;

- tasks developing non-standard thinking, the ability to move away from the stereotypes of solutions – associations, transformations;
- tasks focused on the development of flexible thinking, provoking errors – graphic improvisations, reincarnation.

Heuristic tasks provide opportunities for developing the creative potential. Their non-standard nature stimulates cognitive activities. A decline in cognitive activity and interest in the subject is expected. Creative tasks involve mechanical engineering drawing. They increase student's activity and interest.

Course design is both a learning tool and a form of control. It integrates knowledge of the previous stage in substantiating the concept of the designed object; develops professional interest, skills, spatial representations and creative thinking; deepens, expands and consolidates the graphic culture.

The professional interest is developed more efficiently in professional real conditions. One type of term paper is a collective project. Students perform this task as part of the internship. Students are divided into 2–3 subgroups. The optimal limit of the working environment is 4–6 people. The work of the “creative laboratory” is being carried out: the teacher acts as a customer. Students distribute responsibilities. Some students develop sketches. Other students develop the project or implement individual elements. The final project should be defended. Students should justify its functionality, practical significance, and the possibility of implementation.

Stage III (fourth year) – vocational training (creative). The goal is holistic involvement of students in the creative process, development of sustainability of the professional interest. Disciplines: design (term papers), production practice, final qualification work. Designing problems are solved. Students who independently determine the whole complex of design and graphic activities play a crucial role.

The consolidation of professional interest occurs by deepening creative thinking; spatial representations; introspection of creative design and graphic activities, and professional competencies.

Sustainability of the professional interest is tested during the internship. The phased nature of training showed that students quickly adapt to real working conditions. They easily master all processes from the development of a design project to the sale of finished products. The results identified their desire to work within their specialty.

The training result is the implementation and defense of the final qualification work. It integrates the results of all stages: reproductive, interpretive, and creative. This approach allows us to consider the interest development as a complex level process associated with the transition from one level to another one. All levels are interconnected and each previous level determines the subsequent one.

6. Findings

As a result of the development and implementation of the methodology for the phased formation of students' professional interest in design and graphic activities, the following tasks were solved:

1. The state of the problem has been identified. Despite the results achieved, the issues of interest development should be solved.
2. The role of interest in the structure of vocational training has been determined. Professional interest, being the main component of students' professional self-determination, can be formed through a

set of components: internal: emotional; motivational; intellectual; volitional; educational: cognitive interest; introspection of educational design graphic activities; creative thinking; spatial representations; professional competencies.

4. The conditions for the implementation of the method for the phased professional interest development have been identified. It will ensure the effective transition of students to a higher level of professional self-determination.

5. An educational and methodological system has been developed and implemented. The teaching tools can help students master the educational program while developing the professional interest.

The final diagnosis was carried out to determine the level of development of components of the professional interest. The results are presented in Table 3. Most of the students achieved a high level.

Table 03. Results

students	Levels of professional interest		
	Low level	Medium level	High level
fourth year	10 %	26,7%	63,3 %

The results allow us to believe that the development of the methodology is justified, and its implementation is effective. The data obtained allow us to improve the educational materials.

7. Conclusion

University training is not only a result of knowledge assimilation regulated by educational standards. It is important to take into account components that activate students' awareness of their own activities, develop self-determination, professional skills and ensure the success of joint activities of the participants in the educational process.

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