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AmurCon 2021: International Scientific Conference**THE DIDACTIC TOOLS FOR PROMOTION THE EMPLOYMENT
OF BACHELOR-DESIGNERS: PROGRAMS AND
CHAMPIONSHIPS**

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Abstract

The authors of the publication based on their own experience in the field of design and art education, offer a step-by-step model for ensuring the professional demand for undergraduate graduates, correlated with the requirements of the WorldSkills Russia regulation, which, in their opinion, allows optimizing the process of becoming students' creative independence. On this basis, a modular training program is proposed that takes into account the levels of qualification requirements for professional standards for illustrators and designers. Given the need for a competency-based format to ensure functional literacy, which is fixed by the program of the foresight project "Education - 2030", which determines the need for employment of university graduates in accordance with the received education, the authors propose a solution to the problems caused by the inconsistency of the didactic tools of modern specialized education with its real goals. Why, with the help of a digital update of multidimensional didactic learning tools, they offer a solution that can improve self-esteem, strengthen the volitional components of students in the process of development under the conditions of official certification of the results of professional activities through public profile championships. As a provision of this opportunity, the authors of the material propose a modular program "Technology of Artistic Processing of Materials", with a capacity of 3 credits (108 teaching hours), implemented within 16 weeks.

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1. Introduction

The features of the demographic situation in Russia that determine the decline in the number of potential applicants at all levels of higher education, government measures intended to overcome the problems associated with the 2019 pandemic, interest in the process of total digitalization of economically significant areas of social development and the expected legislative equalization of forms of distance and offline studies in higher education, their own observations of the peculiarities of transforming the cognitive activity of undergraduate students in design and artistic directions determined the following actions of the authors of the material. The authors consider that digital renewal of multidimensional didactic teaching tools, with the help of which the subjects of educational activity will be able to confirm their competitiveness in the process of employment and continuing their studies in the magistracy, is necessary, which explains the relevance of this material. The meaning of these actions is determined by the fact that on the basis of the concept of developmental education, which assumes a two-level transformation of both the cognitive activity of students and the use of didactic teaching tools corresponding to the goals and objectives of the educational process, it is necessary to create a training modular program. This program is designed to correct mistakes that have formed for various reasons in the learning process with the help of specially designed educational tasks. The solution of these tasks provides for mastering the competence skills of soft- and hard skills. Two years ago, the authors of the proposed educational modular program developed a similar program to ensure a stable attraction of applicants to bachelor's degrees in design and artistic directions. Their interests were related to determining the volume and nature of pre-professional skills, the experience of which corresponded to the results of early career guidance work with schoolchildren and graduates of secondary vocational educational institutions.

2. Problem Statement

The analysis of the substantive part of the hard skills as professionally important skills showed that in the new training module it is necessary to take into account the supra-professional skills – soft skills. It ensured the correction of the professionogram (job analysis) of the graduates of the design and art bachelor's degree and made it easier for them to search for work and employment according to the profile due to the formed skills of individual and teamwork and the ability to take responsibility for their actions. The specificity of the formation of soft skills competencies is determined by the transformation of the life experience of graduates who are able to successfully overcome the difficulties of interdisciplinary and interpersonal situations after working in a project training office. The system of interviews of graduates with representatives of employers showed their insufficiency due to the corporate non-transparency of the procedure in a number of cases and the lack of manifestation of the criteria for selecting applicants for the position. For this reason, considering the alternative public WorldSkills Russia championships (Kirichenko & Strikhanov, 2019) which are also held at the regional level, the authors have developed and tested a modular training program. The development of this program allows undergraduate students to successfully overcome difficulties in the field of professional employment (OECD..., 2019). Since potential employers choose employees based on professionally significant results, getting acquainted with

the results of individual educational results and qualifying competitions in the format of the specified championship, confirms the effectiveness of this program in promoting employment of the population (Pak et al., 2021).

Consequently, the problem and subject of the publication is the presentation of the structure and logic, the content component of the modular program, designed for effective help for students in job placement matters. But, taking into account the fact that the results of the work of graduates of the design and creative directions of the bachelor's degree (illustrators, designers) are determined by interdisciplinary requirements, the structure of the program takes into consideration the competencies formed during the educational process by such disciplines as art history, drawing, painting, information technology, aesthetics, and others, since art-valuable works expected as a result of the work of graduates of design and art bachelor's degrees always correlate with the conditions of their possible appearance and preserve the atmosphere that determines the process of artistic shaping of objects and phenomena offered to the population as a consumer of specialized products (Naumkin et al., 2021)

3. Research Questions

The announced educational modular program «The Technology of Artistic Processing of Materials» reveals the intentions of the authors to improve the employment situation of senior students and graduates of the design and artistic directions of bachelor's degree. The analysis of existing educational programs led the authors to the idea that many of them are focused on didactic teaching aids that are irrelevant due to the total digitalization of the educational sphere, which partly explains the loss of students' interest in professionally significant courses, since they significantly lose their initial attractiveness in conditions of remote access. Against this background, the authors had been creating an educational modular program over the past two years. The structure and logic of this program is determined by stepped progress from the pre-professional level of competence in the profile of training (illustration, design) to the formed levels of functional and then professional literacy of a designer (graduate of design and creative directions of bachelor's degree). The proposed program, which has been successfully tested for two years in the universities of the Russian Federation (Pacific State University (Khabarovsk), Omsk State University (Omsk), has an interdisciplinary nature and the ability not only to identify obvious mistakes of competence in the learning outcomes of bachelors, but also their effective correction based on the requirements of professional standards supported by the regulations of WorldSkills Russia (Rumyantseva, 2021). The didactic support of the concept of developmental education, the formation of professional competence of students in bachelor's degree in design and creative areas of higher education based on both the clarification of the content components of the programs and digital visualization capabilities, suggests a number of opportunities (Tomyuk et al., 2019). These opportunities are determined with the formation of ideas about the process of morphological analysis of objects, the creative understanding of the structure of which can lead a developer to create a prototype. The authors proposed a simple one using the capabilities of thinking analogue that is characteristic for many students: a morphological analysis of objects that are visually attractive to draftsmen, causing them absolutely positive reactions. On the basis of it, students could find a level deeper than which their creative imagination would not go even so to find the «common ground» by the

most, the very knowledge or technological complication, to overcome which they need an instructor, more professional or technologically advanced than themselves. Thus, the particular is determined: learning mistakes associated in most cases with the student's lack of ability to structurally analyze the system object, lack of qualifications of an illustrator, low level of associative thinking, gaps in knowledge in the field of art history, which can explain the shortcomings of observation and the corresponding loss of speed thinking at the stage of sketching or stylizing a natural object.

Therefore, choosing mistakes and suggesting ways to correct them with the help of digital multidimensional didactic tools, it becomes possible to determine the stage of a student's competence error and, against this background, overcome it with the help of an interdisciplinary search for methods, sources and materials that can overcome the outlined pause in the professional development of a bachelor. The definition of the purpose of this publication led to the solution of the following tasks:

- a determination of the formation level of functional literacy of bachelors and after training according to the developed program;
- a clarification of the structure of the tasks of the program, taking into account the necessity for digital updating of multidimensional didactic teaching tools;
- a probation of the proposed results by instrumental methods in the creation of digital visual products;
- an approbation of the approach to the creation and promotion of educational content, determined by the requirements of the WorldSkills Russia format that has a didactic focus of integrative content.

4. Purpose of the Study

A feature of the research is the search for an algorithm that can qualitatively improve the content of the curriculum in a number of disciplines. Since with the help of the decomposition, primarily determined by Shatalov (1996) as a search for a single logical structure that allows instant awareness and memorization of the essential features of the studied phenomena, as well as the concept of developing education and the proposal of Steinberg (2002) on the necessity to create reference schemes that allow one to determine mistakes in the acquired knowledge by the method of their visualization, so this search for an algorithm led the authors to the necessity to use an integrated approach and structural analysis of the system object, which represents a wealth of knowledge of the resulting education.

5. Research Methods

The methodology of an integrated approach is able to determine the regularity of updating didactic tools for teaching creative specialties and make innovative proposals in the standardly interpreted educational process.

Since the very fact of the interdisciplinary nature of higher education of bachelors in design and creative directions raises no issue, but nevertheless, it is not always fulfilled, the proposed educational modular program allows you to combine the methods of structural, iconological, visual, historical, morphological analysis of materials used in the process of teaching bachelors in the areas 54.00.00

(design) and 07.03.03 (design of the architectural environment), and determining the field of the authors' intentions of the publication.

The materials for this publication were the personal developments of the authors and the educational works of students who had been training in the modular program «Technology of Artistic Processing of Materials» at the Pacific State University for two years, as well as at the sites of parallel testing at Omsk State University. Sources and materials, various open access publications, determined by the direction of research interest were used in order to confirm the intentions of the authors.

6. Findings

The authors of the program «The Development of the Labor Market and Promotion of Employment of the Population of the Khabarovsk Territory» (The Development..., 2021), supporting the state program, are fully interested in creating conditions that determine the sustainable formation of the regional labour market. The authors of the publication proposed a modular curriculum that integrates the results of training in the basic curricula of the university cycle of bachelor's degree project - artistic orientation in order to determine, in the process of individually oriented learning, not only the necessary methodological and educational materials, indicating to the understanding of society's needs in: "... the selection of content components and new methods, innovative forms, learning technologies" (Barannikov et al., 2018, p. 73), but also the provision of "... modern means of information, and for the most part - digital technologies and tools that allow the development of such materials ..." (Baranova & Elizarova, 2009, p. 33). Resulting in the authors of the material announce the structure of the educational modular program «Technology of Artistic Processing of Materials», which, being originally developed to ensure a steady flow of applicants to the university, was later transformed to support the selection procedure of the WorldSkills Russia format. The educational modular program «Technology of Artistic Processing of Materials», developed with the help of multidimensional didactic teaching tools, is determined by both theoretical social and applied significance, since its authors have developed tasks that allow to overcome the fragmentation of knowledge components compiled by various academic disciplines in the learning process, but not always finding a comprehensive solution in the form of professionally oriented activities (Martynov & Dyachkova, 2020). Taking into consideration this circumstance, the idea of creating programs corresponded to the analysis of changes in indicators of professional interest / demand among senior students and graduates of bachelor's programs. It allowed to calculate the number of required tasks and determine their content. As it was stated above, the program takes into account 7 professionally necessary actions that graduates of the design and artistic directions of bachelor's degree must know and be able to perform accurately, the training of which already forms professionally demanded qualities (competencies), but does not always show them at the level of functional literacy of an employee (designer, illustrator). Thus, the first task of the program determines the student's ability to reproduce from nature, from memory and representation of an object or object, which is recognized as a necessary natural analogue of the subsequently developed prototype. Since, students have formed an idea of a genetically single, but morphologically diverse natural world, since, starting with an elementary check of the formation of graphic skills and skills of morphological analysis of a natural object, students are offered an image - a recognizable, realistic image of a botanical fragment because this task is perceived

by all students as lightweight and does not cause inhibition when it is necessary to quickly switch to sketches-stylizations of the natural form. By creating a graphic drawing, students demonstrate a fundamental professional propensity to illustrative work and the ability to identify the main and secondary in a full-scale object in the case of a transition to the necessary stylization of its form according to the task. The results of graphite or ink drawing reveal both the experience of viewing paintings in museums and exhibition complexes of students and the general culture of linear representation since the skills of a finger, «hand drawing» can now be lost due to the general enthusiasm for digitizing analogues, because the nature of the drawing always gives out style preferences. But, in this situation, the task contains a detail that checks the formation of both observation and analytical abilities of students, since they need to disassemble the object at the level of transition to the creation of modules of an ornamental nature (modules of ornamental composition) into parts. These parts are significant for its recognition and identification, which, according to the second task, will need to be stylized in a certain manner (this is work on variants) and digitized using Adobe applications, performing the operation of working out the contour drawing of a part of the object «in curved» lines.

After that in the second part of the task, a student needs to convert the received (optionally, in parts) modular stamps into a circle and develop a seal on that basis, with the provision of a probable print. Then a student proceeds to the implementation of a graphic stamp, which is often a qualification task confirming the employee's competence in seeking a place in hiring (which, as a matter of fact, the graduate should be ready for). The third task involves the development of a textile print (or prints in any other medium), created on the basis of an ornamental composition, that may be subject to regionally justified requirements (for example, compliance with the ethnocultural characteristics of the ornament, or its historically determined purity). The fourth task is quite simple since it combines the second and the third task. However, it requires placing the generated image on some external advertising space (media), for the purpose of which the developer is offered support for a probabilistic promotional campaign. The fifth task is significant for future developers of graphic products since it involves the creation of a logo, which can demonstrate interdisciplinary awareness and the formed artistic taste of the future bachelor since for such work he will need knowledge in a number of subjects that determine his general aesthetic training. At the stage of the fifth task, students who feel their professional competence usually stop consulting with teachers, as they begin to look for approval on social networks, posting their works to receive motivating responses. The sixth task demonstrates the possibility of performing professional orders by students or a bachelor on their own since it involves the creation of a brand book for a specific product offer. The seventh task is technical and requires a description of everything listed within the bounds of a learning report about the completed training course. At this point, the student has an opportunity of creating and professional placement of the so-called «portfolio» - «competency certificate», that a student presents for admission to competitive tests within the framework of the championship and in the qualifying events of WorldSkills Russia.

Analysing the logic of constructing the educational modular program «The Technology of Artistic Processing of Materials», it is possible to determine the volume of professional requirements for both a designer, an illustrator in the primary search for a job in the field, and the specifics of the qualification requirements of the international certification system for the activities of graduates of design and artistic

directions of study in higher education (Shokorova & Mamyrina, 2020). For comparison the results that reveal the dynamics of indicators of professional demand for bachelor's and senior graduates, formed as a result of training, attention was paid to the details of their formation. It determined training and revealed the features of didactic tools for the formation of graduates' professional qualities (Khamidulin, 2020). The authors consider that the characteristics of motivation for professional activity in students are determined not only by literally understood professional competencies but also by the ability to flexible communication solutions that increase the chances of successful employment, which is explained by the adaptability that is necessary for work in any team. Summing up the results of the two-year work of the educational modular program «The Technology of Artistic Processing of Materials», the authors share the position of Khvorostov et al. (2021). According to this position, the necessity to track forecasts in the field of self-determination of senior undergraduate students on the basis of changes in creative, professionally-oriented behaviour is considered. Moreover, according to this position, the evaluation criteria of their activities are clarified and the creative process is corrected, which has a pronounced applied nature. Based on the data, published below with the help of the diagram (Diagram 1), the effectiveness of the implementation of the training module «The Technology of Artistic Processing of Materials» is obvious when referring to the test results of training participants (hard-skills professional test) and early employment in the specialty (during the training period of 3-5 courses according to the second half of 2021). The students that finished the education, were tested again (the first half of 2021) to determine the dynamics of changes in the field of satisfaction with employment conditions, self-esteem growth and personal transformations in the field of professional growth, which, according to the survey, they associated with the modular program. As indicated by the results that determine professional awareness and demand among students and graduates of the academic bachelor's degree, it is possible to observe a qualitative increase in indicators that determine the nature of the professional activity: independent thinking (Meshkova, 2015), the creative nature of solutions adopted, an adequate response to professional criticism, responsibility and performance skills. That is why the authors of the course indicate the availability of a qualitative transformation of the level of competence among students since the implementation of the integrated training module revealed not only the formation of the performing skills required by employers but also allowed job seekers to change their self-esteem, strengthen indicators of responsibility and openness to regional criticism from the professional community. Therefore, this program has discovered personal growth and readiness for employment according to the profile of training among graduates of the educational program. Analyzing the obtained data, it can be concluded that undergraduate students have noticeably improved results determined by the formation of reflection regarding their own professional experience. It is partly confirmed by an increase in the metacognitive indicator and motivational component in the structure of professional activity.

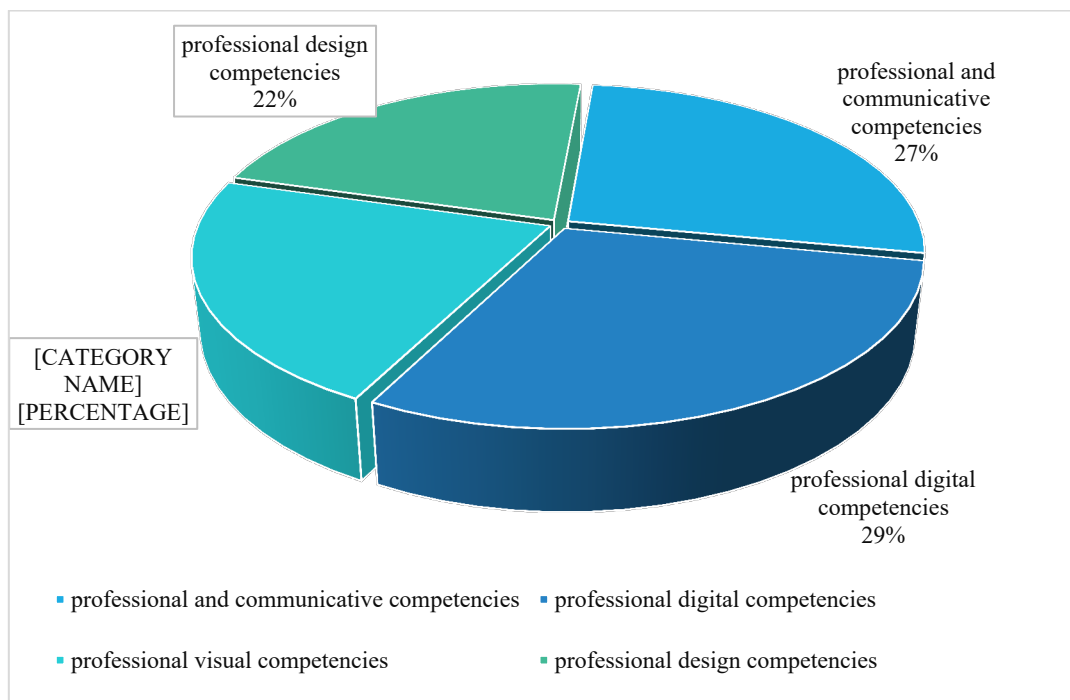


Figure 1. The effectiveness of the development of professional competencies by undergraduate students who have finished studies in the modular program «Technology of Artistic Processing of Materials» in order to form the professional competence of a designer according to WorldSkills Russia in the 2020-2021 academic year

7. Conclusion

A review of the possibilities of digital renewal of multidimensional didactic tools, with the help of which the process of developmental education in the domestic higher design and art school reveals positive changes in terms of the professional demand for bachelor's graduates. This process suggests the possibility of bachelor's graduates' personal growth, determined by the formation of social and communicative competencies and over-professional characteristics in the learning process. Performing skills, evaluated as a result of testing on the basis of the WorldSkills Russia competency model, testifies to the interest of employers in the achievements of students with clear interdisciplinary characteristics. This detail, in turn, can be proof of the legitimacy of the use of internal resources (content) of modular curricula, since external (determined by the digitalization of expressive means of artistic design) reveal changes in multidimensional didactic teaching tools. All this, as the authors of the material considered, is the result of a historical update of the language of translation of visual data that are used to overcome the communicative barrier in the modern educational space (Knyazeva, 2021). The limitlessness of communications, determined by the expressive means of the visual, allows not so much to determine the possibilities of using the appropriate tools for forming the competence of graduates of the design and artistic directions of higher education but to solve simple, urgent in a practical version, tasks of ensuring the employment of bachelors in the profile of the education received at the university. The authors of the modular curriculum «Technology of Artistic Processing of Materials» recognize their actions as effective, since they are determined with the didactically significant content of the course and the use of digital

visualization tools that are necessary for the development of professionally significant performing skills. These actions indicate to the process of positive transformation of the university graduates' personal characteristics.

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