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PROFESSIONAL COMPETENCY AS A COMPONENT OF ARCHITECTURE -STUDENTS TRAINING

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Abstract: The article reveals the meaning of "competency". The author proves that purpose of higher education is to acquire a high level of academic and creative artistic, professional and general competencies required for activities in a specific occupation or a field of knowledge. In Ukrainian education the term "competency" is used within the meaning suggested by European countries. DeSeCo programme (Definition and Selection of Competencies: Theoretical and Conceptual Foundations) launched in 1997 within the Federal Statistics Department (Switzerland) and the National Centre for Education Statistics (USA and Canada) defines "competency" as an ability to successfully meet one's individual and social needs, to act and to perform tasks. Competency is based on knowledge and skills, but is not limited to those. It always includes one's personal attitude to the above, and one's experience enabling to "entwine" such knowledge with what the person already knows, and ability to guess a real-life situation, in which he/she will be able to apply such knowledge. In other words, each competency is built on a combination of cognitive attitudes and practical skills, knowledge and abilities, values, emotions, behavioural components, i.e. everything one can summon up for an active action. The author elucidates the essence and content of the competency-based approach to development of professional competencies in architecture students and analyzes professional competency as a component of training of architects-to-be. Acquisition of professional competencies by architecture students must rely on existing key competencies of school leavers. They must be fluent in the national language and have foreign language communication skills, must have information and communication competency and mathematical competency, teamwork skills, self-learning skills throughout their lives, etc. However, a student's personal qualities also play a key role here, such as creative talent, developed spatial thinking, responsibility, organizational skills, teamwork skills, originality, ingenuity, creativity, realistic approach, sense of harmony, taste and style, observation skills, good memory, sociability and punctuality.

Architectural training in Ukraine lasts for 6 years. One can divide training of architects-to-be into the following stages:

I. Initial: introducing students to their future occupation. Realization of their potential in architecture will depend on their perceptions developed at this stage. This stage may help a person to understand his/her place in occupation or to become disillusioned with the chosen field. Time-wise this stage covers the first and second years of study.

II. Evolvement: development of the feeling of professionalism. This is facilitated by studying occupation-oriented courses and understanding the content of the future professional activity. Time-wise this stage covers the third and fourth years of study.

III. Final: architecture students begin to realize specific features of their future occupation. They do not only have a certain scope of knowledge, but are able to acquire their own subjective experience in architectural activity. Time-wise this stage covers the fifth and sixth years of study and includes preparation of a graduation thesis.

The article reveals that at all stages of training Architectural Design is a key major course, where students learn methods for comprehensive solution of an architectural problem in view of contemporary stylistic trends and design standards, study features of design of buildings with varying three-dimensional spatial structure, learn typological features of residential and public buildings. The article offers a partial analysis of international and domestic experience in architectural training using the process of architectural practical training as an example. When performing practice-oriented design projects, students develop skills for professional solution of architectural and artistic, functional planning, design and technology problems and gradually create their own creative method of architectural design. During their initial years of study students hone skills in variable methods of sketching, techniques for three-dimensional, structural, image-bearing, colouristic modelling of architectural composition, which greatly enriches their creative experience in design. Organization of learning activity implies that students find their own ways to solve the problem based on familiarization with known methods of occupational activity. In senior years of study problematic nature of Architectural Design contributes to professional growth of students, creative design encourages use of parti diagrams, creative techniques and innovative methods of search for solutions. It stimulates creative activity of students and develops their self-reliance, which is greatly contributed by creation of learning situations close to real-life architectural activity. The article offers a partial analysis of international and domestic experience in architectural training using the process of architectural practical training as an example. The author gives examples of students' architectural practical training in Ukraine, Germany, Poland, USA, Sweden and France.
Key words: competency, professional competency, architecture-students, architectural practical training, higher education.

ПРОФЕСІЙНА КОМПЕТЕНТНІСТЬ ЯК СКЛАДОВА ПІДГОТОВКИ СТУДЕНТІВ-АРХІТЕКТОРІВ

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Анотація: В статті з'ясовано сутність поняття «компетентність». Доведено, що метою вищої освіти є здобуття особою високого рівня наукових та творчих мистецьких, професійних і загальних компетентностей, необхідних для діяльності за певною спеціальністю чи в певній галузі знань. Досліджено сутність і зміст компетентісного підходу до формування професійних компетентностей у студентів-архітекторів. Проаналізована професійна компетенція як складова підготовки майбутніх архітекторів. Розглянуто, що на всіх етапах навчання провідною фаховою дисципліною є «Архітектурне проектування», де студенти опановують способи комплексного вирішення архітектурної проблеми з урахуванням сучасних стилістичних тенденцій та проектних нормативів, вивчають особливості проектування споруд різноманітної об'ємно-просторової структури, засвоюють типологічні особливості житлових та громадських споруд. Частково проаналізовано міжнародний і вітчизняний досвід підготовки архітекторів на прикладі проходження архітектурної практики. Наведені приклади проходження студентами архітектурної практики в України, Німеччині, Польщі, США, Швеції, Франції.
Ключові слова: компетентність, професійна компетентність, студенти-архітектори, архітектурна практика, вища освіта.

ПРОФЕССИОНАЛЬНАЯ КОМПЕТЕНТНОСТЬ КАК СОСТАВЛЯЮЩАЯ В ПОДГОТОВКЕ СТУДЕНТОВ-АРХИТЕКТОРОВ

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Аннотация: В статье рассмотрено понятие «компетентность». Проанализировано, что целью высшего образования является получение студентом высокого уровня научных и творческих, художественных, профессиональных и общих компетентностей, необходимых для деятельности в определённой специальности, в определённой сфере знаний. Исследованы сущность и содержание компетентностного подхода к формированию профессиональных компетентностей у студентов-архитекторов. Проанализирована профессиональная компетенция как составляющая в подготовке будущих архитекторов. Рассмотрено, что на всех этапах обучения ведущей профессиональной дисциплиной является «Архитектурное проектирование», где студенты овладевают способами комплексного решения архитектурной проблемы с учётом современных стилистических тенденций и проектных нормативов, изучают особенности проектирования зданий и сооружений разнообразной объёмно-пространственной структуры, осваивают типологические особенности жилых и общественных зданий. Частично проанализирован международный и отечественный опыт подготовки архитектора на примере прохождения архитектурной практики. Приведены примеры Украины, Польши, Германии, США, Швеции, Франции.
Ключевые слова: компетентность**,** профессиональная компетентность**,** студенты-архитекторы, архитектурная практика, высшее образование

Problem Statement. Changes occurring in the contemporary social and cultural life of the society, rapidly progressing revolution in science and technology, information-based relationships in social environment make their impact on education and trigger the need for reform and review of the content of education, bringing it in line with contemporary requirements and needs of the society. Urgent tasks of professional training are reflected in the National Doctrine for Education Development [7], Ukrainian National Strategy for Education Development for the years 2012-2021 [8] and key areas of implementation of the Bologna Declaration [2]. Key problems of architectural education are elucidated in the Charter on Architectural Education developed by the International Union of Architects and UNESCO (1996, 2005) [11].

Ukraine's entry into European educational environment, integration of the national system of education into the global system and orientation on European and global standards triggered the need for reorientation of the content of contemporary education using the competency-based approach. Therefore, we believe that reforms in higher education shall be focused on engineering majors. And architecture is one of such majors required by the society. It deals with solution of both utilitarian and aesthetic problems taking into account specific features of the medium, for which one or another facility is created. Hence, training of architecture students must be multidimensional and take into account numerous aspects.

Analysis of the Latest Studies and Publications. Among Ukrainian and Russian researchers and practitioners dealing with applied matters of implementation of the competency-based approach in education and interpretation of fundamental matters of interrelationship

between strategic categories of the competency-based approach one can name N. Bibik, L. Vashehcnko, I. Zymnia, S. Kalashnikova, L. Parashchenko, S. Trubachova, L. Khoruzha, A. Khutorsky and others. Experience in implementation of the competency-based approach to studies in foreign countries has been analyzed by such Ukrainian scholars as O. Ovcharuk, O. Pometun, O. Lokshyna and others. Various theoretical and methodological aspects of architecture students training in the system of higher education have been studied by K. Aliabin, Yu. Aseyev, L. Bachynska, M. Barkhin, Ye. Bilousov, V. Vadymov, Yu. Volchok, L. Kovalsky and others [1].

Purpose and Tasks of the Article. Purpose of the article shall be to identify the meaning of the term "competency" and to study and to analyze trends in development of professional competencies in architecture students in Ukraine and abroad. Tasks: 1. To analyze the term "competency" to be developed in architecture students during academic process in an institution of higher education; 2. To study the meaning and content of the competency-based approach to development of professional competencies in architecture students; 3. To analyze international and domestic experience in architecture students training by way of analysis of professional competencies in institutions of higher education.

Presentation of the Main Material. Purpose of higher education is to acquire a high level of academic and creative artistic, professional and general competencies required for activities in a specific occupation or a field of knowledge. Competency is a dynamic combination of knowledge, abilities, skills, ways of thinking, views, values, other personal qualities determining one's capability for successful socialization, implementation of professional and further learning activities [9]. In Ukrainian education the term "competency" is used within the meaning suggested by European countries. DeSeCo programme (Definition and Selection of Competencies: Theoretical and Conceptual Foundations) launched in 1997 within the Federal Statistics Department (Switzerland) and the National Centre for Education Statistics (USA and Canada) defines "competency" as an ability to successfully meet one's individual and social needs, to act and to perform tasks. "Competent" means experienced in a certain field or thing; "competence" means cumulative powers of an authority or powers of a person established by the law, regulation, etc. According to dictionary of modern English usage "competence" means 1) ability and skills to perform necessary activity; 2) being knowledgeable in a certain area; 3) special skills for performance of certain occupational tasks. Competency (from the Latin "competens" – proper, adequate) means cumulative consistent functional knowledge and skills (in research and production, social and political life, psychology and education science, economics, subject knowledge and appropriate personal qualities) necessary for efficient professional activity (of an institution of higher education, student, teacher). Competency is based on knowledge and skills, but is not limited to those. It always includes one's personal attitude to the above, and one's experience enabling to "entwine" such knowledge with what the person already knows, and ability to guess a real-life situation, in which he/she will be able to apply such knowledge. In other words, each competency is built on a combination of cognitive attitudes and practical skills, knowledge and abilities, values, emotions, behavioural components, i.e. everything one can summon up for an active action. And in the opinion of many researchers, "competence" is derived from "competency" and determines the area of application of one's knowledge, abilities and skills, whereas "competency" is a source category semantically, representing the sum, the system, certain knowledge [6].

Higher education standard for the first level (bachelor's degree) in the area of focus 19 – Architecture and Construction, major 191 – Architecture and Urban Planning, determines the following list of competencies for a bachelor's degree holder:

- Integral competency;
- General competencies;

- Major-oriented (occupational) competencies [9; 10].

Let's discuss major-oriented (occupational) competencies in more detail:

We believe the most crucial of those are:

- Ability to think critically and to apply basic theories, methods and principles ofmathematical and natural sciences, information science and computer modelling, energy efficient technologies;
- Knowing and understanding features of development of historical and contemporary styles in architecture, urban planning, art and design in Ukraine and foreign countries;
- Ability to apply critical analysis and assessment of natural and climatic, environmental, engineering and technological, social and demographic, architectural and urban planning conditions of architectural design;
- Ability to make technical and artistic images for use in architectural and urban planning design;
- Knowing and understanding basic laws and principles of architectural and urban planning design composition, creation of an artistic image and style when designing buildings and structures, urban planning facilities, architectural environmen facilities and landscape facilities;
- Knowing and understanding theoretical and methodological basics of architectural design, basics of typology of buildings and structures, urban planning facilities, architectural environment facilities and landscape facilities;
- Ability to draw up technical documentation, to use computer visualization tools, to make models and visual aids for architectural and urban planning projects of new development, reconstruction and restoration of existing facilities;
- Ability to understand general theoretical and creative principles of architecture and urban planning;
- Ability to understand basics of architecture of buildings and structures;
- Ability to understand basics of architectural environment design;
- Ability to understand basics of reconstruction and restoration of architectural facilities [10].

Acquisition of professional competencies by architecture students must rely on existing key competencies of school leavers. They must be fluent in the national language and have foreign language communication skills, must have information and communication competency and mathematical competency, teamwork skills, self-learning skills throughout their lives, etc. However, a student's personal qualities also play a key role here, such as creative talent, developed spatial thinking, responsibility, organizational skills, teamwork skills, originality, ingenuity, creativity, realistic approach, sense of harmony, taste and style, observation skills, good memory, sociability and punctuality [5; 8; 10].

Architectural training in Ukraine lasts for 6 years. One can divide training of architects-to-be into the following stages:

I. Initial: introducing students to their future occupation. Realization of their potential in architecture will depend on their perceptions developed at this stage. This stage may help a person to understand his/her place in occupation or to become disillusioned with the chosen field. Time-wise this stage covers the first and second years of study.

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At all stages of training Architectural Design is a key major course, where students learn methods for comprehensive solution of an architectural problem in view of contemporary stylistic trends and design standards, study features of design of buildings with varying three-dimensional spatial structure, learn typological features of residential and public buildings. When performing practice-oriented design projects, students develop skills for professional solution of architectural and artistic, functional planning, design and technology problems and gradually create their own creative method of architectural design. During their initial years of study students hone skills in variable methods of sketching, techniques for three-dimensional, structural, image-bearing, colouristic modelling of architectural composition, which greatly enriches their creative experience in design. Organization of learning activity implies that students find their own ways to solve the problem based on familiarization with known methods of occupational activity. In senior years of study problematic nature of Architectural Design contributes to professional growth of students, creative design encourages use of parti diagrams, creative techniques and innovative methods of search for solutions. It stimulates creative activity of students and develops their self-reliance, which is greatly contributed by creation of learning situations close to real-life architectural activity [3].

For the purpose of development of Ukrainian architectural education it seems useful to study and to adjust elements of the global practice of educational design, to learn known occupational techniques used by architects today and experimental design methods, to practice communication skills in professional environment. For instance, professional architecture training programme in the USA is oriented on students' interests, is fairly flexible and enables one to simultaneously acquire a second non-core occupation or advanced knowledge in the related field or in fields not connected with the student's major. According to requirements of the National Architectural Accrediting Board (NAAB), graduates must acquire competencies in intellectual, spatial, technical and interpersonal communication skills, to understand historical, social and cultural, environment context of architecture, to find comprehensive solutions to architectural design problems, to understand an architect's role in and responsibility to the society. Most qualification requirements deal with professional architectural training and reflect a graduate's readiness to do design, i.e. a set of constructional, technological, economic, organizational knowledge and skills, knowledge of legal and social standards. A crucial requirement is one's skills in comprehensive design, i.e. ability to develop an architectural project taking into account numerous factors, which entails creative work skills at the cutting edge of form, technology and perception [4; 5].

In Germany architects-to-be must undergo practical training in an architectural firm. One should mention that on holidays students work in architectural firms even it is not a requirement of the educational institution they attend. This is a sign of the young people's attitude to education and to acquisition of practical skills.

In Poland architecture students must undergo practical training any time before they complete their third year of study. Students may undergo such training in their supervisor's facility or in another place of the country or abroad. Duration of practical training is two weeks.

In European countries, such as France and Sweden, elements of architectural education are included into school curriculum. In order to obtain a degree in architecture in Sweden, students must undergo practical training simultaneously with the academic process. It includes 17 weeks of architectural training, minimum 4 weeks of construction training and minimum 4 weeks placement in an architectural firm [4].

Requirements to architects in European countries have certain differences, but we can outline the key ones:

– An architect must acquire knowledge in territory planning and building design, residential area planning in view of public needs, environmental conditions and natural resources;

– An architect must acquire professional knowledge to the extent enabling him/her after a few years of architectural practice to design separate buildings and to develop urban planning projects.

We believe these requirements are essential for Ukrainian architects-to-be as well.

Conclusions. In view of the above-mentioned competencies, an architect must acquire skills to develop and to manage development of architectural projects taking into account functional and aesthetic requirements; to develop a concept, design proposals; to work with material, to systematize, to analyze and to do critical assessment of data; to integrate knowledge into design solutions. Communicative function means an architect's ability to present and to make a customer understand the architect's idea to the full extent, to modify design solutions in view of the customer's wishes using tools of manual and computer graphics.

All of the above abilities and skills are an integral part of an occupationally competent expert, though today a crucial element in development of the architect's competency is information competency.

As of now, most problems in architecture training remain unsolved. There is no comprehensive approach to studying various academic subjects; institutions of higher education hardly ever make use of information science training, use of information technologies is in most cases erratic and intuitive; approach to teaching is not focused on final result, which is development of a person able to apply acquired knowledge and skills to solution of specific problems.

Moreover, equally important is the fact that most first-year students have no artistic training, so it is necessary to create new approaches to training and academic process management for such students. Based on the above, we can conclude that potential areas of focus for learning activity of students are those oriented not so much at acquisition of traditional elements of knowledge, abilities and skills, as at management of a person's modes of operation. This requires implementation of appropriate practical techniques and methods for arrangement of classes and student's independent work supported by competency-based, activity-based and information-based approaches. .

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