

The background of the top half of the image is a blurred photograph of a Foucault pendulum in motion. The pendulum's bob and strings create a series of overlapping, circular, and elliptical light trails in shades of white and yellow against a dark background. The text 'WayScience' is overlaid on this background. The word 'Way' is in a blue, sans-serif font, and 'Science' is in a similar blue font. Two horizontal orange lines are positioned above and below the 'Way' part of the text, extending across the width of the letters.

# WayScience

**1st International Scientific  
and Practical Internet Conference**

**«Integration of Education, Science and Business  
in the Modern Environment: Winter Debates»**



I Міжнародна науково-практична  
інтернет-конференція

«Інтеграція освіти, науки та бізнесу в  
сучасному середовищі: зимові диспути»

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## **PSYCHOLOGICAL-PEDAGOGICAL COMPETENCE AS THE BASIS OF PEDAGOGICAL SKILLS**

**Yanishen I.V.**

**Pogorila A.V.**

**Fedotova O.L.**

**Zapara P.S.**

**Bilobrov R.V.**

In the context of reforming higher education, the task of improving the qualification of teaching staff comes to the fore. The expected innovations, as well as the need to implement a competent approach to the professional preparation of students, envisaged by the education reform, place new requirements on the psychological and pedagogical competence (PPC) of university teachers. With the spread of the introduction of distance education, teachers will soon have to master new pedagogical technologies, which emphasize on the independent cognitive activity of students and the development of their social and professional competences, which ultimately must ensure the mobility and demand of professionals in the market. In order to properly organize the psychological and pedagogical training of teachers in the system of additional vocational education, it is important to develop a model of psychological and pedagogical competence, based on which it would be possible to comprehensively solve the task.

The analysis of scientific literature has shown that the majority of scientists define the concept of "competence" because of a set of knowledge, skills and willingness to use them in their activities. However, this definition lacks a very important component, namely, the values guided by the specialist. Thus, under the psychological and pedagogical competence of the teacher we will understand the complex of relevant knowledge, skills, values, as well as the readiness of their

creative realization in professional and pedagogical activity, which together provides its high results. It is advisable to talk about psychological and pedagogical competence, and not just about pedagogical, as the teacher has to solve not only educational and didactic tasks, which themselves require high psychological training, but also perform the psychological functions associated with the study of individual characteristics. students, predicting the development of their personality, organizing joint activities and productive communication in a training group, solving conflict situations, regulating their own mental states, etc. n.

On the one hand, competence is a characteristic of the personality of a specialist, on the other hand, it is formed and manifested in professional activity, determining its results. Therefore, it is logical to consider the structural components of competence in the activity-personal aspect and to take into account the presence of a motive in the teacher, knowledge of ways of carrying out pedagogical activity, its ability to perform with full understanding of meaning. Therefore, the following components can be distinguished in the structure of the teacher's psychological and pedagogical competence: 1) positive motivation to demonstrate competence (motivational component); 2) the knowledge that underlies the understanding of the content of pedagogical activity and the choice of ways of its implementation (cognitive component); 3) skills, experience and experience of successful implementation of necessary actions (operational and technological component); 4) value-semantic representations and relation to the content and result of activity (value-semantic component). The criteria for assessing the psychological and pedagogical competence of a university teacher are thus a set of relevant knowledge, skills, values, which he guides in his activity, and a willingness to be qualified, with a high level of quality to perform his functions.

Despite the fact that the dynamics and degree of development of competence depend on personal factors, it is the content and functions of pedagogical activity that determine the meaningful content of psychological and pedagogical competence. In order to determine the content and to allocate on this basis the types of psychological and pedagogical competence of the teacher, it is necessary to study the professional

and pedagogical activity in various aspects. Professional and pedagogical activity is nothing but a specially organized type of work activity of the teacher in the education, upbringing, development of the student's personality and formation of the student collective. From the many scientific approaches to its study, we will choose those that give it a comprehensive idea, that is, allow you to consider professional and pedagogical activity in the aspect of content (structural and functional approach), in terms of features of its organization as a certain process (process approach), in aspect solved by the teacher of psychological and pedagogical tasks (task approach), as well as in terms of levels of development of this activity (dynamic approach).

Analysis of professional and pedagogical activity in terms of its content content (structural and functional approach involves the selection of different areas of this activity and the corresponding functions performed by the teacher. Traditional teaching and training of students are traditionally attributed to the main directions and functions of professional and pedagogical activity. this takes into account both the individual development of each student (his cognitive abilities, emotional-volitional sphere, personal qualities, etc.), and the formation of the student team , including the organization of productive joint activities and communication of students in the group. Thus, the main areas of professional-pedagogical activity are didactic, educational, differential-psychological and socio-psychological, which determine and appropriate types of psychological and pedagogical competence of the teacher.

The second aspect of the analysis of the teacher's pedagogical activity is related to the use of a step-by-step approach, which is widely used in management theory. It is advisable to study professional-pedagogical activity as a process that has a certain logic, a set of stages related to the goal setting and its achievement. In any activity can be distinguished the following stages: its imaginary representation, the implementation of the intended, summarizing and thinking. It should be borne in mind that the activity includes both an external plan (that is realized directly in practice) and an internal plan (that is carried out in the mind). Of course, the degree of activity awareness may be different, so some of the highlighted stages are present in a collapsed form.

If we talk about professional and pedagogical activity in its perfect performance, it is obvious that it cannot be carried out completely spontaneously and unconsciously. Therefore, the selected stages have a specific content and designation: imaginary representation of the activity is carried out as its design and construction; realization of pedagogical activity is carried out, first, as its organization and management of technological processes, and secondly, as regulation and management of communication processes; summarizing is nothing but a teacher's evaluation and evaluation activities; comprehending activities are analytical-reflexive mental operations. With this in mind, it is possible to distinguish the following stages and corresponding functions of the teacher's professional and pedagogical activity: 1) design and construction stage; 2) the stage of realization of the activity, at which the following functions are performed: organizational-technological and communication-regulatory; 3) the stage of control and evaluation actions; 4) analytical-reflexive stage. It is easy to notice that the first and last stages are connected with the active work of consciousness, that is, they are carried out in the "cognitive-reflexive space", the second, third and fourth - with practical activity, with the exit of the teacher into the "physical space".

At the design and construction stage, the teacher determines the goals, diagnoses the conditions of pedagogical activity, the intellectual abilities of students, predicts their achievement and on the basis of the above performs competent planning. Design provides the definition of the content of education and training, the choice of means, in relation to the goal. Thus, the design and construction phase usually precedes the practical activity. It should be emphasized that designing as a special kind of thought activity, permeates all other stages, ensuring the preservation of "design". The stage of realization of professional-pedagogical activity actualizes the practical experience of the teacher, as he has to solve specific tasks of the "external plan": first, to organize the technological side of the pedagogical process, and secondly, to regulate the communicative interaction with students and students with each other. It is necessary to separate these functions, since in the first case the teacher organizes and manages the technological process, in the second case - a social and psychological process, which implies the presence of different types of competences.



The control and evaluation stage is specific for pedagogical activity, so we consider it as an independent stage; it requires some training from the teacher. The functions of control and assessment are important not in themselves, but in time to make the necessary adjustments in the educational activities and behavior of students.

The analytical-reflexive stage completes the single cycle of the teacher's activity. Thinking about the activity is connected with the active work of consciousness, including self-consciousness, when the teacher immerses himself in the cognitive-reflexive space and conducts, first, the analysis of the performed activity and the obtained results, and secondly, the analysis of one's own actions, actions, relationships. Thinking about the activity, the teacher at the same time assesses their strengths and weaknesses, is better aware of their professional abilities, that is, refines self-esteem and deepens the idea of themselves. It should be borne in mind that analytical and reflexive operations permeate all the above stages, is a kind of "feedback" mechanism, which provides a constant adjustment of the teacher.

Thus, the selection of stages of professional and pedagogical activity and the corresponding functions (design, organizational, technological, communicative-regulatory, control, evaluation, analytical-reflexive) allows to determine the types of psychological and pedagogical competence of the teacher, which are related to the ability to organize pedagogical process and to carry out competent management of activity of students. It should be noted that the selected types of competencies of the teacher have a professional and universal character, that is, inherent in many professionals who manage the activities of other people.

Key words: psychological and pedagogical competence, teacher of higher education, structural components of competence, types of competence, levels of competence development.

### **References:**

1. Методы системного педагогического исследования: Учебное пособие / Под ред. Н.В. Кузьминой. – Л.: ЛГУ, 2013. – 170 с.
2. Педагогика: Большая современная энциклопедия / Сост. Е.С. Рапацевич. Мн.: Современное слово, 2014. – 720 с.

3. Морева, Н.А. Педагогика среднего профессионального образования: Учебное пособие для студентов высших педагогических учебных заведений / Н.А. Морева. – Издательский центр «Академия», 2013. – 272 с.

4. Равен Дж. Педагогическое тестирование: Проблемы, заблуждения, перспективы. – М.: 20. – С.67.

*Тематика: Інші професійні науки*

## **РЕВЕРС-ІНЖЕНЕРІЯ ПРИ ПРОТОТИПУВАННІ В ПРИЛАДОБУДУВАННІ**

**Яригін В.А.**

студент гр. ПБ-61,

**Вислоух С.П.**

к.т.н, доц.

КПІ ім. Ігоря Сікорського

### **ВСТУП**

При розробці приладів і механізмів одна із найбільш суттєвих статей витрат – це конструювання та виготовлення нестандартних деталей. За умови малої кількості часу та обмежень фінансових ресурсах – розробка виробів «з нуля» не є оптимальним варіантом. Тому, для зниження вартості їх розробки, доцільно використовувати методи проектування на основі дослідження ринку наявних виробів.

Останнім часом великої популярності в різних областях діяльності людини набуває технологія реверс-інженерії. За допомогою цього методу можна отримати креслення виробу або деталі з готового зразка та дослідити роботу виробу або його частини, котрі в подальшому можна вдосконалити або видозмінити під вимоги створюваного приладу.