PROFESSIONAL-SYNERGETIC SCIENTIFIC-METHODIC COMPETENCY OF TEACHERS IN THE POSTGRADUATE PEDAGOGICAL EDUCATION SYSTEM

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1. Introduction

Our society determines learning during life as a leading idea of education renovation. Accordingly, the role of pedagogical workers (PW) and scientific-pedagogical ones that teach and train applicants of education (students, pupils, listeners of courses) for satisfying needs of the present labor market and realization of the necessity of postgraduate education grows. Today needs from specialists not separate knowledge in a certain branch of science, but the integrity of functioning and development of the educational sphere as a whole, interdisciplinary, transdisciplinary, integrative, system character, orientation on the formation of the society for an educated personality, rational society and development of the civilization of global education and science. But today it is not expedient to teach youth by the principle of a single correct answer. In the information society the necessity of system mastering of professional-synergetic scientific methodical competences by teachers of postgraduate pedagogical education (PPE) grows.

2. Literary review

The analysis of pedagogical-psychological literature testifies to the considerable interest to the problem of determination, formation and development of competences of PW and SPW in the system of postgraduate pedagogical education (PPE).
Thus, synergetic parameters of pedagogy as a determinant of creative learning are discovered in [1], conceptual, theoretical-methodological, functional and competence formation principles of synergetic pedagogy as a new interdisciplinary branch of the professional-pedagogical activity are revealed in [2]. The modern condition of the sphere of education management: analysis of a managerial staff is studied in [3], theoretical substantiation of the necessity of forming the professional-synergetic scientific methodical competence of teachers in the system of postgraduate pedagogical education in [4]. The scientific-research component of the professional-synergetic scientific methodical competence of teachers in the system of postgraduate pedagogical education is studied in detail in [5], requirements as to the integral competence of a pedagogical and scientific-pedagogical staff for the system of postgraduate pedagogical education are concretized in [6]. The increase of interdisciplinary integration in the educational process and through web-video-series is presented in [7]. The methods of teaching students on the cross of disciplines and cultures and also theory and practice are presented in [8]. The professional competence of teachers in the century of globalization in the world is presented in [9]. The methodology of expert estimation of cognition results, development programs and plans is discovered in [10].

But despite such detail analysis of requirements to the competence of PW and PSW, the question of forming the professional-synergetic scientific methodical competence of teachers in the system of postgraduate pedagogical education remains little studied.

3. Aim and tasks of the research

The aim of the research is to determine the essence and structure of the professional-synergetic scientific methodical competence of teachers in the system of postgraduate pedagogical education.

The following tasks were set for attaining this aim:

- to analyze the topicality of synergetic pedagogy for the system of postgraduate pedagogical education;
- to concretize functions and levels of the scientific methodical competence of teachers;
- to specify the content of the terms “professional-synergetic scientific methodical competence of teachers”, “functional-philosophical, general scientific, concrete-scientific scientific methodical competence” and to determine their structure for defining the categorical apparatus and terminological base of this study.

4. Theoretical-methodological aspects of substantiating the determination of the essence and structure of the professional-synergetic scientific methodical competence of teachers in the system of postgraduate pedagogical education

Synergetic pedagogy is an advanced interdisciplinary branch of pedagogical and synergetic science that studies formation and development properties of a human of the modern socio-natural generation at its upbringing, formation as a convinced subject, responsible for preservation of the life activity environment and professional development during the whole life. It is grounded on correspondent worldview ideas, namely:
- favoring of the development of a person for his/her self-discovery and self-improvement, self-actualization in the process of cooperation with other people and with him/herself;
- development of integration of different ways of world mastering by a human (art, philosophy, mythology, science and so on), at that the development of integration must be based on holistic tendencies of ideas about the objective reality;
- change of the role of a teacher, educator, professor that provides the transfer to common actions of all participants of the learning-upbringing process in new situations in the open, flowing, irreversible world;
- elaboration of a modern model of the pedagogical profession in the context of social needs, development prospects of the national economy and global technological changes and so on.

5. Results of the research

The studies, conducted by us, make possible the following interpretation of the notion “synergetic integrated scientific methodical competence of teachers” (SiSMC) – a multi-component integral system of equivalent general (universal, key) and professional competencies, realized through all learning stages during life by combining, mutual using and adding forms, methods, means and technologies, creating the science-consuming methodical support of the educational process and based on it, scientific statements and argued results as a consequence of making studies in a certain field of science, solving complicated scientific-theoretical or practical problems.

This competence of a teacher, educator is represented in:

- system qualities: purview, erudition, scientific intellect, humanism, humanitarian thinking; social justice, intellectual character, purposefulness, mobility, dynamism of a personality, adaptability, multiculturalism, tolerance, empathy, emotional intellect, expressiveness, developed speech, artistry, optimism and so on;
- talents: to scientific cognition, analytic-thinking activity, system analysis, quality of components of the social and educational environment, sciencemetry, system-pedagogical management, prognostication, modeling and planning and so on;
- abilities: to perceive, to systematize and to translate scientifically grounded information, to study the environment (social, educational), age transformation of a target material for different training categories, ability to methodical, social work, artistic and aesthetic comprehension of reality, moral-ethic attitude to a person, ability to bioethics, ecological ethics and so on;
- readiness: professional self-consciousness and realization of the pedagogical activity, according to standards, concentration of the professional (spiritual, personal and physical) potential, psychological readiness (psychological self-regulation, activity in non-standard conditions, ability to foresee, anticipate future, to produce a certain reaction to them), ability to self-regulation, wide use of information-TV-communication-multimedia means in the educational process, social responsibility and so on;
The general scientific level includes conceptions, paradigms, approaches, principles, regularities, used in sciences branches by generalization, systematization of scientific researches. It is characterized by perceiving real phenomena as systems by their construction and activity laws. In the context of our research this level is grounded on the idea of the necessity of education continuousness, correspondence between old and new laws, conceptions, models of teacher’s competences in the system of postgraduate education for the sustainable development.

The concrete-scientific one is a totality of notions, techniques, methods, research principles and procedures, used in one or another special scientific discipline. Modern science has numerous researches, devoted to the ratio of the methodology of pedagogy and its branches in the development and mutual connection that appear at the boundary between sciences, so-called interdisciplinarity.

The technological-operative component of the scientific-methodological competence consists of the method and technology of the study (determination of the role and place of methodological knowledge in the system of learning, ability to use scientific methods on a concrete material, to use techniques of systematization, generalization, classification, integration of interdisciplinary knowledge and also the ability of a teacher, educator to orient in the informational space, to use technical and multimedia means, to possess and to operate information, according to professional needs, to estimate an achieved result). At this level methodological knowledge has a distinctly expressed normative character.

SiSMC of teachers in the system of PPE is a totality of complex-creating and integrated imperative of partial competences, formation of each of them is one of parameters of the general degree of the scientific-methodological competence.

Depending on content of the synergetic SMC of teachers, educators and levels of cognitive and technological operational components, main functional groups of partial competences are determined (Table 1 “Functional groups of the professional-synergetic scientific methodical competence of teachers”)

Competences of each functional group have a certain educational potential, necessary for forming parallel integral competences, and are included to SiSMC of teachers. The creatively formed SiSMC testifies to the highest realization level of this potential, embodied through the process of learning each discipline or course at qualification improvement, re-training, probation.

The effectiveness of forming the professional-synergetic scientific methodical competence of teachers in the system of postgraduate pedagogical education, from our point of view, depends on integration of possibilities of its realization in formal, non-formal and informal education.
### Table 1

<table>
<thead>
<tr>
<th>Functional-philosophical scientific-methodological competence</th>
<th>General scientific-methodological competence</th>
<th>Concrete scientific-methodological competence</th>
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<tbody>
<tr>
<td>Philosophical</td>
<td>Scientific-research-experimental Experimental Methodological Creative</td>
<td>Pedagogical Psychological, Mathematical Naturalistic Ecological Environmental</td>
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<td>Religion studying</td>
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<td>Worldview</td>
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<td>Civilization</td>
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<td>Moral-ethical</td>
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<td>Logic</td>
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<td>Culturological Multicultural</td>
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<td>Self-educative</td>
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<td>Critical thinking</td>
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So, the Ukrainian society needs a modern pedagogue, teacher – an integral personal, able to self-cognition and self-development that combines in him/herself the new qualities and pedagogical reputation and is ready to teach to use knowledge, abilities and skills, competences, is striving to get and to acquire new ones, improving methods of their use. It is vitally important for a pedagogue, a teacher to realize continuous professional education, using innovative forms and methods, forming a personality of students and also demonstrating such attitude to learning on own example, realizing own individual educational trajectory.

### 6. Conclusions

1. The topicality of synergetic pedagogy for the system of postgraduate pedagogical education is analyzed.

2. Functions and levels of the scientific methodical competence of teachers are concretized.

3. The content of the terms “professional-synergetic scientific methodical competence of teachers”, “functional-philosophical, general scientific, concrete-scientific methodical competence” are specified and their structure for defining the categorical apparatus and terminological base of this study is determined.

### References


1. Вступ
Якісно нові зміни в українському суспільстві актуалізують проблеми пов’язані з забезпеченням паритетного становища представників обох статей у громадсько-політичній, соціально-економічній і культурно-освітній сферах та поглиблення і розширення відомостей про місце і роль жінки у загальнонаціональному та духовно-інтелектуальному постій.