

# Yevhen Kulyk

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## Managing principles of student research activity under condition of society humanization

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# Managing Principles of Student Research Activity under Condition of Society Humanization

**Yevhen Kulyk**

Kiev, Ukraine

e-kyluk@ukr.net

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The paradigmatic change of the Ukrainian social development requires paradigmatic changes in future specialists' training. Personal problems of a humane, his/her demands, the new living standards require the creative and professionally competitive specialists' training.

The analysis of the Ukrainian education standards reveals that didactic and methodological supplement of research and educational process basically heads for future specialists' arming with knowledge, experience and skills. At the same time some scientists mark that a future scientist's personality, his/her moral and intellectual potential development as well as forming of creativity aim

appears to be omitted by research and pedagogical process nowadays<sup>1</sup>.

The analysis of the scientific literature brought to light the fact of managing system of student research activity in a number of Ukrainian universities being incomplete as well as its forms and methods heredity missing, while pass from junior to senior years of study. Moreover, pedagogical orientation is not evaluated properly<sup>2</sup>.

Our research aims at managing principles of future specialists' research activity (RA) analysis under condition of society humanization as a creative specialist's training factor, experience and skills necessary for RA organizing and upholding determination.

The analysis of scientific literature<sup>3</sup> gives an opportunity to underline basic RA aims:

- modern learning methods take-over, thorough and creative studying of educational material;
- creative personality formation;

1 Ziazyun I.A. High school training of the pedagogue for the profile studying of older classes pupils. Modern information technologies and innovative methods of studying at the experts' training: methodology, theory, experience, problems. // The collection of scientific works. 4 edition. – Kiev – Vinitsa: DOV Vinitsa. 2004. – p.4.

2 Rozov V.K., Guseva V.M. From the experience of the students' scientific-research work at the pedagogical institutes. / The system of the students' scientific-research work organizing at the higher educational institutes of the country: The collection of articles / editorship by V.P.Elyutina. M.: High school, 1984. – p.97-105.

3 Ibidem.

Kulyk Yevhen, Doctor of Pedagogical Sciences, Professor, Professor at Institute of Pedagogy, Psychology and Law of National University "Lvivska Politechnika", Professor at Institute of Professional Technical Education of National Pedagogical Academy of Ukraine

- educational and research skills forming in spheres of professional and psycho-pedagogical courses;
- methods and means of self-education and original practice;
- research and analytical skills development.

The history of Ukrainian universities establishment and development clearly explains the genesis and present condition of disproportion and priorities between intellectual and manual work which are not on the side of the last. At the same time the main feature of progressive countries postindustrial strategies is the priority of product such as knowledge and information<sup>4</sup>.

That is why the main problem of RA managing, as we see it, is RA image projection that is composed of three components:

Positive civil opinion about the role of knowledge and science in society. This is especially up to date when a civil society forms, when people and government are partners and when the intellectual development of the society influences people's attitude towards education and science.

Students' achievements propaganda in the pedagogical research activity (PRA) by media and by personal communication during conferences, seminars, etc. aiming at best experience and moral motives implement.

Students' intake in organizing and upholding conferences, exhibitions, contests, days of sciences with a purpose of PRA management skills forming and students' involvement into learned society.

4 Ibidem.

The second serious problem concerning the organizing of RA is students' methodological training. Such training is supposed to result in abstract concepts (what science is, as well as pedagogics, research and pedagogic practice, science paradigms and learned society) mastering by students<sup>5</sup>.

As<sup>6</sup> extract shows, "methodological knowledge, despite its importance, doesn't give the algorithm of main pedagogical and simple human problems solving. This knowledge should result in finding ways to solve the problems, to reveal a number of methods and theories for these problems disposing and solving. The complicity of pedagogical process is seen by the number of methods and approaches (usually contradictive, as pedagogical process itself is) applied to its management and control. To classify these methods and to assist teachers in their apprehending we use the concept of paradigm<sup>7</sup>. The knowledge of different scientific paradigms is a teacher's methodological knowledge. It is paradigm that helps to classify myriads of approaches, methods, theories in pedagogical science. The difference between them has fundamental importance. This means that we can't describe one paradigm through the other or to make one general paradigm or scientific theory.

5 Kulyk Ye.V. Historic-methodological models of science knowledge origin. Bulletin of Lviv University. Pedagogical series. 2004. Edition. 18. p. 257-265; Kushnir V. The concept of the paradigm in the teacher's methodological training. / Pedagogics and psychology of the professional education, scientific-methodical magazine.: №5, September-October 2004., p.7-21.

6 Ibidem.

7 Kulyk Ye.V. Historic-methodological models of science knowledge origin. Bulletin of Lviv University. Pedagogical series. 2004. Edition. 18. p. 257-265; Kushnir V. The concept of the paradigm in the teacher's methodological training. / Pedagogics and psychology of the professional education, scientific-methodical magazine.: №5, September-October 2004., p.7-21; Sidenko V.M., Grushko I.M. The basis of the scientific researches. – Kharkov.: High school, 1977. – p. 200.

The transition to another paradigm changes one's opinion about pedagogical process as well as teacher's mental outlook and perception, methods of his/her pedagogical practice. Such a change changes a teacher him/herself".

Our priority is forming such concepts as scientific paradigms, research methodologies, and the place of education in the paradigm of human activity. As far as these concepts are basic for future research methodology and are philosophically contradictive (i.e. views on science, scientific practice, role of the researcher, code of scientist's honor, decision-making, etc.), it is better for first students' research-works to be dedicated to these problems.

The change of educational system in the modern humanitarian society and of its final aim forces us to look at organizing future teachers' research activity in another way. It is well-known that management is defined as a necessary function of any organizing system – it maintains the work of this system, guarantees the safety of its structure, the realization of its program and goals.

So, the concept of management remains one of the most necessary and important in any purposeful activity. And management skills are crucial in the process of a creative personality teaching<sup>8</sup>.

Inasmuch as students' research work makes a complex of necessary educational, pedagogical, scientific and cultural tasks its management should be enriched by a composite system approach that means permanent improvement in all spheres of student learning society.

8 Sidenko V. M., Grushko I. M. The basis of the scientific researches. – Kharkov.: High school, 1977. – p. 200.

Time demands an improvement of system flexibility and mobility as well as RA management practice. It is necessary to renovate educational system matter constantly and to increase future teachers' creative and managing qualities. Therefore we should solve such tasks in order to reach the posed aim:

- determine what knowledge and skills future teachers should have for managing and upholding PRA;
- analyze different forms of PRA management and research the most effective of them;
- inquire into methodological base of PRA management.

The analysis of the literature on PRA management at the institutes of higher education in Ukraine and neighboring countries shows much common from complex plans for the all studying period<sup>9</sup> to the recommendations for PRA management during the educational and extracurricular hours. The classical pedagogics, as was shown in<sup>10</sup>, generated the forms of behavior of the pedagogical process, searched the conditions of its optimal realization, created the organizational structures. "Processness" of the pedagogical process was derivative concerning its forms of organization.

The hard regulation of the PRA at the institutes of higher education created so-called "conveyor"

9 Rozov V. K., Guseva V. M. From the experience of the students' scientific-research work at the pedagogical institutes. / The system of the students' scientific-research work organizing at the higher educational institutes of the country: The collection of articles / editorship by V.P.Elyutina. M.: High school, 1984. – p.97-105; Sidenko V. M., Grushko I. M. The basis of the scientific researches. – Kharkov.: High school, 1977. – p. 200.

10 Ibidem.

of forming the creative personality that in much degree antagonized the part of creative students.

The point of view based on the synergy theory, that we suggested as the basis of the modeling the development of society foreknows primary exactly the "process" and organizational structures and forms for it should grow out of it, around it on the basis of discovering the attractors<sup>11</sup>.

That's why it is desirable that the faculty department should have the "bank" of the complicated, unsolved problems either deeply-fundamental or applied, connected with the real life, oriented at the basis of the local educational institutions. The themes must be adopted at the faculty departments.

All pedagogical problems must be systemized, the corresponding information-methodic ensuring for the individual work at these problems should be created.

The pedagogical experience shows that more effective attraction of the students to the scientific-research work observes when the faculty department has concrete connection with the schools. That is when schools are ground for the application of the pedagogical innovations, approbation of the new pedagogical developments, checking theoretic developments at the practice. The experience shows high effectiveness of the PRA when the faculty departments have their branches at the schools.

The compulsory condition of the effectiveness of PRA management is the system of organizing in the plans succession of the forms and methods of

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11 Kulyk Ye.V. Historic-methodological models of science knowledge origin. Bulletin of Lviv University. Pedagogical series. 2004. Edition. 18. p. 257-265.

RA while passing from junior to the older courses. The aim is the logical order of attraction of the students to the scientific-research work with the following complication of the assignments in the tight connection with the educational process. That's why it is desirable that the certain succession from scientific idea through laboratory researches, projecting and modeling to the practical application of the pedagogical idea (research) should be realized. Such approach forms student's skills of organizing and planning of the complex works, management of the scientific group in future, foreseeing its future activity.

The way to the science begins at the first preface lecture, first laboratory work, first individually done paper, searching in the library. The code of the scientific honor of the scientist is one of the main parameters in the definition of the science paradigm<sup>12</sup>. That's why the role of the manager is the most important component of the structural organization of the PRA.

The certain traits of the scientist are one of the principal conditions of the scientific activity. The researcher should master self-critics, ability for assessment of the results, which must be systematically sorted with the certain paradigms. At the same time the researcher should critically assess the results of the work of the other scientist and do not accept the results only as somebody's authority or tradition. The future researchers obligatory must be fostered with all these traits<sup>13</sup>.

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12 Kulyk Ye.V. Historic-methodological models of science knowledge origin. Bulletin of Lviv University. Pedagogical series. 2004. Edition. 18. p. 257-265; Kushnir V. The concept of the paradigm in the teacher's methodological training. / Pedagogics and psychology of the professional education, scientific-methodical magazine.: №5, September-October 2004., p.7-21.

13 Ziazyun I.A. High school training of the pedagogue for the profile studying of older classes pupils. Modern information technologies

The next step in PRA management is ensuring RA by such type of activity as preparation of the scientific paper reports, selection of the information. The analysis of the skills of working with the literature<sup>14</sup> and pedagogical experience shows the necessity of forming certain students' knowledge concerning the work with the book. At the methodological level students possessing knowledge of basic paradigms in science<sup>15</sup>, should understand that the book is not only the source of science, but also the source of false (depending on the condition of the development of the certain paradigm covering the book). While writing the paper works it is necessary that student must analyze the works, which differently assess certain process or phenomenon (different paradigms), then he can see the genesis of the certain problem and make forecast events.

The analysis of the literature shows that the core experience of RA organizing depending on specialty of future students and specifics of the educational-training process was formed in Ukrainian and foreign didactics of high school.

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14 Sidenko V. M., Grushko I. M. The basis of the scientific researches. – Kharkov.: High school, 1977. – p. 200.

15 Kulyk Ye. V. Historic-methodological models of science knowledge origin. Bulletin of Lviv University. Pedagogical series. 2004. Edition. 18. p. 257-265; Kushnir V. The concept of the paradigm in the teacher's methodological training. / Pedagogics and psychology of the professional education, scientific-methodical magazine.: №5, September-October 2004., p.7-21.

The main organizational problem is the choice of the themes that should be free. The manager of the study group at first meetings must outline the scientific paradigm he and his study group are attracted to, show contiguous, competitive paradigms, correct methods and ways of scientific researches and work with the literature. The emphasized attention should be taken for the serving of the researches, their organization, desire of penetration in the core of the things, issues, improving the culture of thinking.

The modern technological processes are created in the system of automatic projecting or at the higher level – automatic system of scientific researches. In this connection the mathematic modeling of the processes – that is skills of creating models and researching models – must be outlined in paper works. It is mostly useful at the studies on technology of materials, electronics, materials cutting, hydraulics and machines' parts.

The choice of the regimes, materials, environment allows students to widen their imagination about the processes and creatively find the optimal solving of the tasks with many parameters. At the higher courses more attention must be devoted to the modeling of the pedagogical situations and conducting the pedagogical researches.

The course paper work by its orientation and structure must be near to the little research. The setting of the problem, defining work aims, opening of the theme (analysis of the literature, argumentation, analysis of the definite material, examples and comparisons), deductions and recommendations should be described. The special attention should be devoted to the forming students' skills of logical joining of the parts of the research, to make transitions from the experiment

processing to the deductions. The structural-stylistic designing of the work and its outward appearance also play vital role.

The execution of the paper work has its aim the future development of the creative and cognitive abilities of the student and as the final stage of the studying in the higher educational institution is directed at the strengthening and widening of the theoretical knowledge and deep studying of the chosen theme. Many students are working in their specialty at the higher courses and it is often taken into account while choosing the theme of the diploma. That's why besides the analysis of the literature the own practical experience in particular issue can be included in the diploma as the analysis of the pedagogical experience that greatly enriches scientific and practical value of paper work<sup>16</sup>.

With this aim the list of the knowledge, habits and skills that student must become familiar with at the higher educational institute and those that he should master after ending studying.

The done analysis of the literature and our researches allow to match two groups of the knowledge that are needed for the PRA: the first group consists of the knowledge necessary for the conducting and organizing of the experimental researches – defining the quantity of the excerpts; creating and planning of the experiment; questioning; mathematically work up the experimental

16 Kulyk Ye. V. Historic-methodological models of science knowledge origin. Bulletin of Lviv University. Pedagogical series. 2004. Edition. 18. p. 257-265; Rozov V. K., Guseva V. M. From the experience of the students' scientific-research work at the pedagogical institutes. / The system of the students' scientific-research work organizing at the higher educational institutes of the country: The collection of articles / editorship by V. P. Elyutina. M.: High school, 1984. – p.97-105; Sidenko V. M., Grushko I.M. The basis of the scientific researches. – Kharkov.: High school, 1977. – p. 200.

data; form mathematical models; what is the paradigm; the code of the scientific honor; the work with the information resources; the second group consists of the knowledge necessary in the PRA for the studying the pupils' individuality, methods of influencing them and also conducting the analysis and using advanced pedagogical experience.

The cited knowledge should form corresponding skills, namely: skills of organizing and conducting the experiment, questioning and mathematically work up the results of the experiment; using methodic; conduct graphic interpretation of the results of the experiment; to make analysis and deductions.

## Yevhen Kulyk

Kiev, Ukraine

e-kyluk@ukr.net

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### Managing Principles of Student Research Activity under Condition of Society Humanization

#### Abstract

The managing principles of future specialists' research activity (RA) analysis under condition of society humanization as a creative specialist's training factor, experience and skills necessary for RA organizing and upholding determination are defined in the article. The basic aims and components of RA are determined in the article. Author shows that basic concepts for future research methodology are scientific paradigms and the place of education in the paradigm of human activity under condition of society humanization.

Kulyk Yevhen, Doctor of Pedagogical Sciences, Professor, Professor at Institute of Pedagogy, Psychology and Law of National University "Lvivska Politechnika", Professor at Institute of Professional Technical Education of National Pedagogical Academy of Ukraine