

# Methodical Work as a Means of Developing Professional Reflection of Teachers

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**Abstract:** The article highlights the analysis of theoretical and methodological work on methodological work as a result of the authors' reflection. The main aspects of methodological work are investigated.

In the context of researching the problem of professional reflection of a college teacher, we consider methodical work as a means of instrumental and technological support of the process of teaching academic disciplines. Methodical work has a potentially reflective character, during which the college teacher carries out self-analysis of his own attitude to professional activity, assimilates its means and methods. The analysis of experience of methodical work of pedagogical colleges has revealed, that its purpose is mainly identified for the purpose of functioning of methodical offices of these establishments and professional activity of their heads. Comprehension of the information received allowed us to conclude: if development of professional reflection of teachers of colleges is not specifically and purposefully carried out in the process of methodical activity, then spontaneous formation of the main components of professional reflection (motivational, cognitive, activity, personal) is ineffective and slow. Consequently, this process should be guided and improved. The method of analysis and synthesis, exploratory and explanatory methods are applied for the purpose of effectiveness of the study.

**Keywords:** *certification of teaching staff, subject and cycle commission, forms of methodical work, structure of methodical work, tasks of methodical work.*

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## Introduction

Methodical work is important for the formation of professional reflection of college teachers. Issues of organization and management of methodical work in school are revealed by (Bakhmat 2019; Bezliudnyi 2019; Yu. Babansky 1982; L. Vashchenko 2005).

Methodical work - a system of analytical, organizational, diagnostic, scientific and practical, information activities to improve the professional level of teachers, based on the achievements of science and the best pedagogical experience; an indicator of the innovativeness of an educational institution, which is created on the basis of systemic innovations in terms of purpose, content of education, organization of the educational process. It should support the activities of teachers in the educational space of a particular educational institution (Honcharuk, 2021; Povidachyk, 2021; Zhurat, 2020; Gurevych, 2020; Shahina, 2017).

Therefore, we consider it necessary to make adjustments to the tasks and structures of methodological work in order to strengthen its orientation towards the special self and mutual research. In connection with the topic of scientific research, it was important to conclude on the main forms of methodological work, where the professional reflection of a teacher of a teacher training college is spontaneously formed: self and mutual analysis of classes, a meeting of subject and cycle commissions and teacher certification. Thus, a comprehensive theoretical analysis of the problem and the study of practical experience indicates the need for scientific substantiation and development of a structural and functional model of professional reflection of teachers of mathematical disciplines in the system of methodological work of a pedagogical college.

In a higher education institution (HEI), methodological work should be organized and carried out the following principles: systematic, scientific, consistent, continuity, continuity, efficiency, flexibility, mobility, science, connection with life, relevance, creativity, unity theory and practice, etc. Gerasymova (2019). Its content is: systematic study and analysis of curricula, programs, textbooks, the state of teaching the subject, the quality of student achievement; study of normative and legal documents concerning educational activity; mastering the methodological and theoretical foundations of teaching the subject; study and use in practice of modern achievements of pedagogical science, the best pedagogical experience; development of initiative and creativity; innovative searches of teachers; introduction of results of scientific researches.

At the same time, in the context of research of a problem of professional reflection of the teacher of college, methodical work remains unaddressed of researchers that encourages scientific researches of the author.

The word "system" in the dictionary of the Ukrainian language is interpreted as "the order caused by the correct, planned arrangement and mutual connection of parts of something", Bilodid I.K. (1971).

Methodical work in the college is aimed at ensuring the process of teaching disciplines (information support of teachers on psychology, pedagogy, professional disciplines, testing and introduction of new educational technologies). The same opinion is held by M. Fitsula (2006), defining methodical work as purposeful activity of a higher educational institution to support psychological, pedagogical and methodical training of higher school teachers in order to increase the efficiency of their educational activities, Cooper J. (2014). Methodical work is aimed at the comprehensive development of creative abilities of teachers, developing their research skills, interest in new pedagogical technologies, promoting the development of teachers' skills and abilities of independent work for continuous training and skills development, Maksymchuk (2018).

However, there are other understandings of the content of methodological work. In particular, M. Potashnik (1987) understands methodological work as a holistic system of interrelated measures, actions and activities, based on the achievements of science, advanced experience and a specific analysis of teachers' difficulties, aimed at the comprehensive improvement of the professional skills of each teacher and educator, paying attention to the fact that the teacher's methodological work is reflective in nature. In the process of methodological work, the professional activity of a college teacher becomes the subject of special self and mutual support, secondary cognitive activity is directed to it, Shchedrovitsky G.P. (1995). In other words, in the process of methodical work the teacher carries out self-analysis of his own attitude to professional activity; learns the means and methods of professional activity. The reflective nature of methodical work is confirmed by the conclusions of Yu. Babansky (1982), who considers it as a component of the system of teacher training, which is implemented in the intercourse period.

S. Goncharova (1999) uses the term "scientific and methodological activity" - a specific type of educational activity, the content of which is the creation of the method, its testing, implementation and application.

I. Zhernosek (2005) believes that methodical work is a form of studying and implementing the achievements of advanced pedagogical

experience, i.e. in the process of methodical work there is not only self-reflection, but also mutual evaluation, mutual comparison and mutual enrichment.

The order of the Ministry of Education and Science of Ukraine № 450 of 07.08.2002 clearly defines the main types of methodical work of pedagogical and scientific and pedagogical employees of higher educational institutions:

- preparation of lecture notes; methodical materials for seminars, practical, laboratory classes, course and diploma design, practices and independent work of students;

- preparation, review of textbooks, manuals, dictionaries, reference books;

- curriculum development; training programs; working curricula and programs;

- development and preparation of new laboratory works;

- preparation of computer software for academic disciplines;

- preparation of examination tickets; tasks for modular and final control; tasks for test control;

- development and use of visual textbooks (schemes, diagrams, stands, slides, etc.);

- development and implementation of new forms, methods and technologies of teaching;

- study and implementation of best practices in the organization of the educational process (On Approval of the Time Standards 2002).

Thus, in the context of the study the problem of professional reflection of a college teacher, we consider methodological work as one that is reflective in nature, in the process of which the college teacher carries out an introspection of his own attitude to professional activity; learns the means and methods of professional activity, Chlebowski C (2010). The reflection of a college teacher in the process of methodical work can be not only retrospective, but also advanced, innovative (Palamarchuk 2020; Sheremet 2019). There is not only self-reflection in the process of methodical work, but also mutual evaluation, mutual comparison and mutual enrichment.

### **Tasks and structure of methodical work of college**

In our opinion, the reflexivity of the methodological work of college teachers is determined by its purpose, objectives and structure. We have made an attempt to analyze the goals, objectives and structure of the methodological work of various colleges in Ukraine.

According to the explanatory dictionary of the Ukrainian language, the goal is what one aspires to, what one wants to achieve, Bilodid I.K. (1971). In our work, the purpose of methodical work of colleges is what college teachers want to achieve in methodical work.

Analysis of web-pages on methodical work posted on college sites ([http://koledgepolissy.at.ua/index/metodichna\\_robota\\_v\\_koledzhi/0-29](http://koledgepolissy.at.ua/index/metodichna_robota_v_koledzhi/0-29)); (<http://www.bcsd.org.ua/index.php/navchalno-metodichna-robota/131-metodichna-robota-v-koledzhi>); (<http://kpkbad.km.ua/navchannya/metodichna-robota.html>); (<http://www.medchem.km.ua/index.php/2014-02-04-11-53-26>) made it possible to compare the purpose of the methodological work of the analyzed educational institutions, in particular:

- increase of professional skill and creative potential of teachers, development of innovative activity of pedagogical collective, Fetiskin N.P. (2002);

- improving the quality of education of college students through the use of modern pedagogical technologies in the educational process (<http://www.bcsd.org.ua/index.php/navchalno-metodichna-robota/131-metodichna-robota-v-koledzhi>);

- providing effective assistance to teachers and curators in improving the organization of education and upbringing of college students; generalization and introduction of positive advanced pedagogical experience; increasing the theoretical level and pedagogical qualification of teachers and administration

([http://koledgepolissy.at.ua/index/metodichna\\_robota\\_v\\_koledzhi/0-29](http://koledgepolissy.at.ua/index/metodichna_robota_v_koledzhi/0-29));

- support of a business tone of the teacher, the help in overcoming of difficulties, opening of a way to search, initiative and creativity (<http://kpkbad.km.ua/navchannya/metodichna-robota.html>).

In our opinion, in some cases ([http://koledgepolissy.at.ua/index/metodichna\\_robota\\_v\\_koledzhi/0-29](http://koledgepolissy.at.ua/index/metodichna_robota_v_koledzhi/0-29); <http://kpkbad.km.ua/navchannya/metodichna-robota.html>) the purpose of the methodical work of the college is identified for the purpose of methodical offices of colleges and professional activity of heads of methodical offices of colleges which is not identical.

One of the main tasks of a higher education institution is to "ensure an organic combination in the educational process of educational, scientific and innovation activities" (Law of Ukraine "On Higher Education" 2014 <http://zakon3.rada.gov.ua/laws/show/1556-18/page6>). In our opinion, the system of methodical work of the pedagogical college should encourage (stimulate, promote) the development and self-development of professional

reflection of teachers (on the research topic - teachers of mathematical disciplines) and as a result - to improve the quality of student education. Given the above task of higher education and summarizing the definition of methodical work of different colleges, we believe that the main purpose of methodical work of the college is to improve the quality of student education by improving the professional competence of teachers by introducing best teaching practices and developing innovative teaching staff.

The task of methodical work chosen by pedagogical staffs of colleges is illustrated by Table 1.

**Table 1.** *Tasks of methodical work of college*

Content of tasks of methodical work of college	Western Ukrainian College "Polissya", Ignatova T. (2004)	Chemerovets Medical College (Kaznachev I.V.)	Kremenchug Pedagogical College named after A.S Makarenko, Denga N.M (2016)	Mariupol Construction College, Denga N.M. (2016)
Ensuring a high methodological level of conducting all types of training sessions using new information technologies	+			
Professional development of young teachers (support for professional development and development of beginning teachers)	+	+		
Introduction by teachers of methods and means of the modern pedagogical technologies aimed to increase of cognitive activity of students	+	+	+	+
Introduction of research teaching methods		+		
Introduction into the practice of the college of innovative approaches to the problem of assessing the level of knowledge of students, based on the development and use of a set of computer testing and diagnostic techniques, control and assessment of the level of knowledge assimilation		+	+	
Personally oriented interaction of the teacher with students		+		
Monitoring and diagnostics of competencies of teachers and graduates by means of modern			+	+

pedagogical and information technologies, pedagogical experience				
Updating the goals and content of education on the basis of a competency-based approach and personal orientation, taking into account world experience and the principles of sustainable development, the transition from process to result education			+	
Improving the quality of teaching, development and education of students, the formation of a modern competitive specialist by improving teaching methods				+
Creating conditions for the development of creative potential of students' personality by involving them in various types of research activities				+
Improvement of educational and methodical complexes on disciplines based of branch standards of higher education of Ukraine				+

The analysis of the content of Table 1 allowed us to conclude that the teachers of most colleges perform such tasks of methodical work as: introduction of methods and techniques of modern pedagogical technologies aimed at increasing the cognitive activity of students; monitoring and diagnosis of competencies of teachers and graduates, Chris Frith (2014). The following tasks are partial: use of new information technologies, introduction of research methods of training, personally oriented interaction of the teacher with students, the competence approach to updating of the purposes and the maintenance of education, involvement of students in various kinds of research activity, etc.

Given the specific purpose of the methodical work of the college there is a need to expand and update the tasks of the methodical work of the college, namely:

- ensuring the conditions for the successful development of professional reflection of teachers (including teachers of mathematical disciplines) (the conscious attitude of teachers to the development of professional reflection, understanding by the teacher of mathematical disciplines of the content, structure and means of developing professional reflection, understanding the advantages and limitations in the development of professional reflection of the teacher of mathematical disciplines;

purposeful and grounded development of professional reflection; the formation of a reflective environment);

– inclusion of reflective procedures in the structure of various forms of methodical work; development of individual reflection (repetition technique, individual counseling, individual reflexive games, solution of reflexive tasks); collective development of professional reflection of the teacher (reflective debates, reflective interviews, reflective classes, reflective consultation, reflective workshop, group reflective games, development of programs to monitor their actions (or the actions of their colleagues) in professionally significant situations; introduction of the generalizing educational course "Development of professional reflection of teachers of mathematical disciplines in the system of methodical work of pedagogical college", Deno E. N. (1970).

In accordance with the tasks of the methodical work of the college, a system of methodical work has been created and operates in each higher educational institution, which is structured in a certain way. Structure is the mutual arrangement and interrelation of the constituent parts of the whole (On approval of time standards for planning 2002). The structure of methodical work of different colleges is illustrated by Table 2.

**Table 2.** *The structure of methodical work of colleges*

Elements of the structure of methodical work of the college	Bila Tserkva College of Service and Design	Chemerovets Medical College	College of Sumy National Agrarian University	Kyiv Transport and Technology College	Kremenchug Pedagogical College named after A.S. Makarenko	Khmelnitsky Basic Medical College	Berdychiv Pedagogical College
Pedagogical council	+	+	+	+	+	+	+
Methodical advice	+	-	+	+	+	+	+
Methodical office	+	+	+	+	+	+	+
Cycle commissions of teachers	+	+	+	+	+	+	+
Methodical association of class teachers (curators)	+	-	+	+	+	-	-
School of a young teacher (beginner)	+	-	-	-	+	+	+



teacher)							
School of teaching excellence	-	+	-	-	-	+	-
Creative groups	-	+	-	-	+	-	+
Workshops	-	+	-	-	+	-	+
Subject Cycle Commission Weeks	-	+	-	-	-	-	+
Extended Meetings of Subject Cycle Commissions	-	+	-	-	-	-	-
pedagogical readings	-	-	-	-	+	-	-
Regional (oblast) method of consolidation	-	-	-	-	+	+	+
Scientific societies	-	-	-	-	-	+	-
Scientific and practical (scientific and methodological) conferences	-	-	-	-	+	-	+

The structure of methodical work of any educational institution should contain both obligatory methodical components provided by the state regulations, and elements of methodical work, characteristic only for the concrete educational institution which have developed during their educational activity. The analysis of elements of structure of methodical work of various colleges (tab. 2) allowed to define a basis of structure of methodical work of college: pedagogical council, methodical council, methodical office, cycle commissions of teachers, methodical association of class teachers (curators), Dunn L. M. (1968). According to the defined purpose to plans of work of methodical council, cycle commissions of teachers (and, in particular, the cycle commission of teachers of mathematical disciplines), school of the young teacher (beginner teacher), school of pedagogical skill, creative groups, workshops, pedagogical readings, thematic meetings scientific societies, scientific and practical seminars and conferences offered thematic meetings on the development of professional reflection of teachers (in particular, teachers of mathematical disciplines).

### **Analysis of the main forms of methodical work**

Taking into account the topic of our research, it is important to analyze the main forms of methodological work in which the professional reflection of a teacher of a pedagogical college is spontaneously formed - this is an analysis and mutual analysis of classes, the work of subject and cycle commissions and teacher certification.

V. Bondar (2005), M. Gadetsky (2003) et al. consider self-assessment and self-analysis of the teacher as components of control over the state of teaching subjects (disciplines) by the head of the educational institution and his deputies. Drozhzhina T.V. (2014), M. Makhmutov (1985) highlight self-analysis as a method of increasing the effectiveness of the lesson, the development of professional pedagogical qualities in the process of the teacher's professional activity; methodical aspects of self-analysis and analysis of the lesson are revealed by O. Bozheo (2004), V. Kovalchuk (2011); theoretical issues of pedagogical reflection are raised in the works of Yu. Babayan (2014), A. Bizyaeva (2004). Thus, self-analysis and analysis (mutual analysis) of the lesson as a means of developing the pedagogical reflection of the teacher has not yet been the subject of attention of researchers, and motivated scientific research.

A. Bizyaeva (2004) defines pedagogical reflection as "the process of mental (previous or retrospective) analysis of any professional problem, as a result of which a personality-colored understanding of the essence of the problem and new prospects for its solution arise."

It is necessary to conduct an analysis (mutual analysis) of the classes attended to rethink oneself as a subject of pedagogical activity, to identify and develop the reflexive abilities of the teacher, Ganz J. (2021). The analysis of the attended lesson is carried out by the head of the methodical association of teachers, the head of the department, the dean, the head of the educational institution; mutual analysis of the attended lesson is carried out by colleagues. Different approaches, sights, schemes for the analysis (mutual analysis) of classes are developed and used by V. Bondar (2005), M. Mahmutov (1985) and other authors.

Especially effective is the use of such a form of methodical work as the analysis of the attended lesson for the development of professional reflection among teachers of mathematical disciplines who have five years of teaching experience and take part in the school of a beginner teacher. The purpose of the school of a beginner teacher is to support professional development, development of creative potential of the teacher,

improvement of skills, mastering with the latest knowledge, methods and technology of teaching, Kanner L. (1943). To improve the level of professional skills of a younger teacher, along with attending classes of colleagues of different specialties with subsequent analysis, the following forms of methodical work with young teachers are used: seminars (scientific-theoretical, practical), classes, round table, training, discussions.

V. Kovalchuk (2011) pays attention to the traditional classification of aspects of the lesson that are subject to analysis: pedagogical, psychological, methodological, comparative, target, in terms of pedagogical communication, physiological and hygienic.

S. Pasko (2011) recommends an analysis of the lesson in the following types:

- system analysis, which includes an assessment of the personal qualities of the teacher, student activities, content, effectiveness of methods, goals and results;

- structural analysis, which is carried out in stages (organizational, knowledge testing, preparation for the mastering of new knowledge, the mastering of new knowledge, testing the understanding of new material, consolidation of new material), Martenets L. (2020);

- psychological analysis, during which the psychological goal, style of conduct, the organization of cognitive activity, organization, taking into account the characteristics of the team is considered.

M. Mahmutov (1985) identifies three main types of lesson analysis: complete analysis, brief analysis and aspect analysis.

N. Ostroverkhova (2004) adds to the above classification of types of analysis another complex, "which provides a comprehensive consideration of the unity and relationship of goals, content, forms and methods of lesson organization". Also N. Ostroverkhova (2004) considers the synergetic approach to the analysis of quality of a lesson which «is carried out in the two-aspect plane: a) an assessment of pedagogical activity of the teacher at lesson which maintenance is realized from positions of synergetics; b) an assessment of educational and cognitive activities of students and its effectiveness, taking into account the essence of synergetics ". In our opinion, this approach can be applied in the analysis of classes in higher education. After all, "synergetics" in translation from Greek means "sun" (with, together), "ergon" (work, activity), V. Budanov (2003). This means that there should be cooperation between the teacher and the student in the classroom.

In our opinion, it is necessary to single out several classification factors of the analysis (mutual analysis) of employment: under the direction

of (pedagogical, psychological, methodical, comparative, physiological and hygienic, complex, synergetic); by completeness of analysis (full analysis, brief analysis and aspect analysis). Most often in practice the methodical analysis of a lesson (systemic, structural and for the purpose of pedagogical interaction) is carried out. V. Bondar (2005) reveals the analysis of the lesson as a system with the following components: the purpose of the lesson as an object of analysis, an assessment of the quality of knowledge, analysis of teaching methods.

T. Drozhzhina (2014) proposes an algorithm for structural analysis of the lesson, which can be applied to classes in higher education. According to this algorithm it is necessary to analyze the following areas: the general structure of the lesson, the implementation of the main didactic purpose of the lesson, the development of students in the learning process, education in the learning process, adherence to basic principles of didactics, the choice of teaching methods, teacher's work in class, students work in class, hygienic conditions of employment, some special tasks.

O. Zhelyuk (2004) offers an author's scheme of analysis, which includes the assessment of twenty-four requirements for a modern lesson. In our opinion, it makes sense to use some of them when analyzing classes in a higher educational institution.

A complete analysis of the lesson (according to M. Mahmutov 1985) includes:

- analysis of the purpose of the lesson,
- analysis of the organization of educational and cognitive activities of students,
- analysis of the teacher's activity,
- analysis of students' activities in class,
- analysis of the organizational aspect of the lesson,
- the effectiveness of the lesson.

From the point of view of researching the means of developing the teacher's professional reflection, the coverage of the factors of assessing the teacher's activity is quite relevant. These include: knowledge of factual material, the ability to own the student body (organize to work, increase activity, form cognitive interest, focus on important information), observation, ingenuity, appearance, response to unforeseen situations, style and tone of teaching, gestures, speech culture, etc. Assessment the teacher's activities by the specified factors, observation the dynamics of changes in space and time, allows the leader and colleagues to assess the lesson and the teacher's activities as a whole. The comments and wishes expressed encourage the teacher to reflect.

Regarding the analysis of the lesson, V. Kovalchuk (2011) notes that it can be considered as a reflection that allows you to assess your strengths and weaknesses, to determine the reserves that are not implemented, to clarify certain points of the individual style of activity. From the above theoretical sources we conclude that the analysis of the lesson is quite a powerful tool for the development of professional reflection of the teacher.

Consider the self-analysis of the lesson, which in the explanatory dictionary is defined as the analysis of one's own actions and experiences, from the point of view of the means of developing the teacher's professional reflection, Bilodid I.K. (1971). As noted by I. Shpontak (2010): "Self-analysis by the teacher of his professional activity is a rather complex analytical operation that requires certain skills in research work". According to A. Kuzminsky (2002): "Every teacher must have the skills of self-analysis of forms of their main activity." V. Chaika (2011) notes: "Self-analysis should be carried out at all stages of the professional process." Therefore, self-analysis of their pedagogical activities is essentially a method for self-improvement, one of the means of formation and development of professional reflection of the teacher.

Since the main form of activity of the teacher is a lesson (theoretical or practical), the self-analysis of the lesson should be a constant element of professional teaching. In this context, the problem of self-analysis methods is important.

There is no unanimity among scholars and practitioners about the method of self-analysis of the lesson. Thus, A. Tanasiychuk (2012) proposes to conduct self-analysis of the lesson according to the following plan: place of lesson in the topic, specifics of the lesson, type of lesson, realization of educational, developmental, educational purpose of the lesson, distribution of study time, used teaching methods, used differentiated approach to learning, the organization of control over the mastering of knowledge, skills and abilities, the use of educational and material base of the office, the psychological climate in the classroom. M. Gadetsky (2003) recommends doing self-analysis of the lesson by blocks: the organization of the educational process, didactic and methodological activities, teacher preparation for the lesson, assessment of students, lesson results and homework. As a result of such self-analysis, the teacher answers 54 questions and calculates the level of the lesson according to the given formula. N. Golynska (2010) offers a self-analysis test for young teachers, which consists of 15 questions with answers and a grading system with scales "excellent", "good", "satisfactory", "unsatisfactory". O. Bozhko (2004) developed a number of questions that are grouped into a three-component

structure: orientation stage (preparation for the lesson), executive stage (lesson), control and evaluation stage (lesson reflection). N. Znova (2013), A. Kuzminsky (2002) and N. Stepanenko (2011) give approximate questions that the teacher must answer during the self-analysis of the lesson, the scheme of self-analysis. We agree with N. Moiseyuk (2001) that the existing scientific and methodological developments need to be generalized on the basis of a systematic approach.

### **Subject and cycle commission as a link in the organization of scientific and methodological work of the college**

One of the main links in the organization of scientific and methodological work of the college – subject and cycle commission, which is an association of teachers of a particular discipline or related disciplines. In particular, (V. Lyulchyk 2012; T. Semakova 2012) note the positivity of the subject and cycle commission for professional development, development of pedagogical competence and professional skills of teachers, as well as for the coordination of the process of developing educational documentation; I. Zhernosek (2005) - raising the level of professional skills, S. Bukhalska (2013) - summarizing best teaching practices and best practices.

Cycle commissions focus on the following issues: decisive strengthening of individual approach to teaching students, development of creative abilities of future professionals, their independent work, use of active forms and methods of teaching, seminars and practical classes, discussions, simulations of practical situations, etc., Mishchenko S.G. (2016). In our opinion these issues are declarative in nature. An analysis of the documents of the activity of subject and cycle commissions proves that they do not turn to theoretically considered topics subsequently, experience is not summarized, analysis of trial and error is not done; consideration of topics is not related to the analysis of the state of student learning.

Professional features in the activities of subject and cycle commissions are analyzed by Y. Naida (2013) (using the example of the subject and cycle commission of conductor and choral disciplines and vocals), S. Lubyanska (2010) (using the example of the subject and cycle commission on hairdressing), P. Garkunenko (2007) (on the example of subjects of the psychological and pedagogical cycle). The authors pay attention to the fundamental principles of the activity of subject and cycle commissions (goal, tasks, orientations, forms), which are developed on the basis of the standard provision "On the subject-cycle commission" (On Higher Education <http://zakon3.rada.gov.ua/laws/show/1556-18/page6>).

In particular, among the main tasks of the subject and cycle commission are: organization of the work of college teachers aimed at improving the content of training and education of students; improving the methodological training of teachers in conducting training sessions and educational work; study and promotion of advanced teaching experience; activation of independent work of teachers to improve their qualifications. They are generalizable and do not reflect either the peculiarities of the content of the academic subject, or the professional and personal characteristics of teachers, or the characteristics of the student groups. Typicality is also observed in the areas of work of subject and cycle commissions (educational work; methodological work; organizational work, improvement of the educational and material base) and in the forms (meetings, joint meetings with other commissions, open meetings, attending classes by teachers, review and contests of methodological developments, methodological reports and abstracts, pedagogical research, methodological weeks of the cycle commission, discussions, seminars, "small teachers' council", etc.). As a rule, such forms of recording success, analysis and development of professionalism (professional reflection of teachers) are not used as: programs for monitoring their actions (or the actions of their colleagues) in professionally significant situations with subsequent analysis of the materials received; keeping a diary of reflection, etc.

The activity of subject and cycle commissions differs by the semantic content of professional activity (in our case, teaching mathematical disciplines). Among the "highlights" of achieving success in teaching, the authors call - inspiration, creativity, "mutual interest", the atmosphere of psychological liberation - undoubtedly important in the teacher's activities, however, they are situational, fragmentary, and such that cannot be replicated.

In order to improve the professional level of teachers, the subject and cycle commission studies and summarizes the best pedagogical experience, which is carried out by teachers writing methodological developments based on their own experience, organization of open classes and their analysis, discussion at commission meetings, seminars, round discussions. table on discussion and generalization of experience of work of separate teachers, involvement of teachers in participation in work of regional and regional methodical associations of higher educational institutions of the I-II level of accreditation. An analysis of methodological developments written by teachers on the basis of their own experience shows that in the process of writing them the author relies on his own retrospective, situational and predictive (proactive) experience. However, the

authors do not resort to the analysis of the content and age capabilities of students, the dynamics of the state of preparedness of students after the use of certain methodological means is not carried out, therefore, their effectiveness can be questioned. Analysis of the level of one's own knowledge, skills, and abilities is not found in the materials of the activity of subject and cycle commissions; highlighting your own advantages and disadvantages (in relation to colleagues and previous experience), assessing your professional experience, etc.

The study of theoretical sources and empirical experience proves that the meetings of the subject and cycle commission can be a group form of professional reflection of teachers to analyze the results of pedagogical activities, study and distribution the best pedagogical experience, scientific, technical and pedagogical information. However, the reflective resource of subject and cycle commissions in general and subject and cycle commissions of mathematics teachers in particular is not fully used.

### **Certification of pedagogical workers - one of the methodical measures aimed at the development of professional reflection of a teacher**

One of the methodological measures aimed at the development of professional reflection of the teacher is the certification of teachers, Denga N.M. (2016).

Certification of pedagogical workers is conditioned by the educational policy concerning qualification requirements to professional activity of pedagogical workers, Elnikova G.V. (2010) (Order of the Ministry of Education and Science of Ukraine from 06.10.2010 № 930 <http://zakon5.rada.gov.ua/laws/show/z1255-10/page>). Problems of purpose, content, organization of certification of pedagogical workers are covered in works by N. Znova (2013), Z. Onyshkiv (2003). The use of certification of employees in personnel management (F. Negru 1972; V. Saveliev 2003); place of certification of pedagogical workers in the system of work of methodical service of school, lyceum, gymnasium (N. Shkarpitko 2015; A. Makarchuk 2016).

The very word "certification" means a description of the professional knowledge and business qualities of the employee; review, conclusion about someone or something, I.K. Bilodid (1971).

The dictionary of foreign words interprets the word "certification" as a definition of the employee's qualifications, feedback on his abilities, business and other qualities. In the scientific and educational literature, the



concept of certification is interpreted differently (<http://www.rozum.org.ua/index.php?a=term&d=18&t=3981>).

F. Negru (1972) under certification means "control of qualification of the worker by periodic assessment of his knowledge, experience, skills, abilities, i.e. his conformity to the occupied position or the performed work".

V. Savelieva (2003) considers certification of professional staff as "staff measures designed to assess the conformity of the work level, qualities, potential of the individual to the requirements of the activity. Its main purpose is not to control performance, but to identify reserves to increase the level of return of the employee".

G. Kilyova (2012) says that "certification is a test of the employee's qualifications, their business qualities and assessment, which is carried out in a certain organizational and legal form".

O. Onufrieva (2008) understands certification as "a special type of personnel assessment"

Certification of teachers is a system of measures aimed at a comprehensive comprehensive assessment of their pedagogical activities that determine the compliance of pedagogical employee's position, the level of his qualification, assigned a qualification category, pedagogical title (<http://zakon5.rada.gov.ua/laws/show/z1255-10/page>. - Screen title.).

Many scientists consider both the system of certification and its direct purpose. The purpose of certification is to stimulate purposeful continuous improvement of the level of professional competence of pedagogical workers, growth of their professional skills, development of creative initiative, increase of prestige and authority, ensuring efficiency of educational process (<http://zakon5.rada.gov.ua/laws/show/z1255-10/page>. - Screen title.).

Z. Onyshkiv (2003) notes that certification of pedagogical workers is carried out for the purpose of activization of creative professional activity, stimulation of professional and general education of pedagogical workers, strengthening of motivation of qualitative work, increase of professional responsibility for results of training and education.

According to V. Sukhovi (2010), the purpose of certification is to intensify their creative professional activity; stimulation of continuous professional and general education, quality work; increasing responsibility for the results of training and education; ensuring social protection of competent pedagogical work.

O. Onufrieva (2008) considers the purpose of certification in the rational placement of employees, the effective use of their knowledge, skills

and abilities. As for the system of certification of pedagogical workers, different educational institutions have developed their own system of assessment of teachers' work, which is aimed at evaluating professional (knowledge, skills, experience), moral (efficiency, self-criticism, principledness, honesty, decency), volitional (persistence, energy), business (discipline, leadership, creativity, organization, concentration) of his qualities.

N. Znova (2013) provides a number of questionnaires for such an assessment: a questionnaire for the study of professional needs, a questionnaire for the ability to self-development, a self-assessment questionnaire, and the like. An important role is played by self-assessment and self-development questionnaires from the point of view of the development of the teacher's professional reflection. The self-assessment questionnaire allows the teacher to analyze their theoretical knowledge of the subject, professional skills, social activity, ability to self-education, performance in the form of student achievement, scientific achievements. As a result of the self-assessment questionnaire, the teacher receives conclusions about his professional activity and has the opportunity to develop key tasks for its improvement, which in turn is formed into a self-development plan. The self-development questionnaire helps the teacher to identify the level of the ability to reflect on his own activity and its nature (the teacher spontaneously reflects or allocates a separate time for this). The same point of view is shared by G. Kilyova (2012), who notes that teacher certification "should be based on self-analysis of activity."

I. Kaznachei (pp. 60-67) proposes to assess the level of qualifications of teachers using a portfolio during the certification period, since the portfolio allows the teacher turned attention from the commission's assessment to self-assessment, "assess his achievements ... and build a vector for further activities", make his own development program. Portfolio translated from French means "to present", "formulate", "carry" and "sheet", "page" or "dossier", "collection of achievements", translated from Italian means "folder with documents", "specialist folder". The portfolio as a way of accumulating and fixing materials demonstrates the best practices and achievements of the teacher, as it summarizes, unites into a single previously analyzed parts of professional experience; helps to form the teacher's personal self-awareness and develop plans for improving pedagogical activity. Along with such types of portfolio as "folder of achievements", problem-research, thematic, methodological, L. Sokolova (2008) pays attention to the reflective portfolio, revealing the content of the teacher's personal development, helps to track the effectiveness of his activities, both quantitatively and qualitatively.

N. Shkarpitko (2015) propose to draw up materials for certification using the technology "Methodological Portfolio" - an analogy of the portfolio, which is another way to record, accumulate and assess the creative achievements of the teacher and the formation of reflection on his own activities. According to scientists, the purpose of the methodological portfolio is to provide a report on the work of self-education, the nature of activities, creative and professional growth, promoting the formation of reflection skills.

G. Elnikova (2010) developed a "Basic qualimetric model of professional activity of teachers" and summarized the assessment tools for it, which includes: questionnaires on the knowledge of teachers on the legal framework for education, theory of national education, general principles of pedagogy and psychology, the level of mastery of the method of teaching the subject; tests for subject teachers; methods of assessing the skills of pedagogical communication, communication with colleagues, identifying and assessing communication and organizational skills, self-assessment of business and personal qualities; questionnaires to identify the ability to self-development, to clarify their health, activity and mood, level of anxiety; diary of own professional growth.

The psychological service of the educational institution plays an important role during the certification, setting itself the task: to create conditions for psychological support of the teacher and to help solve professional problems. For this, psychologists have developed a number of exercises for psychological support of the teacher during the certification period to activate the processes of self-knowledge, self-improvement and self-actualization. Among various forms of work with teachers in the period of preparation for certification A. Makarchuk (2016) offers a series of reflection exercises that enable teachers to think about the place of professional activity in their life, what attitude to certification, how to effectively solve professional tasks and problems. In addition, based on psychodiagnostic methods of psychologists developed a comprehensive method of assessing various aspects of teachers during the period of absence of certification - certification rating, during which the final assessments of teacher activities by different groups of respondents (administration, colleagues, students, self-assessment, etc.) and a total rating score. A. Onufrieva (2008) also proposes to use a comprehensive assessment of the work of a teacher. Such an assessment includes five blocks: self-assessment of the professional activity of teaching staff, the level of professional activity assessed by the psychological service of the educational institution, assessment by the administration of the effectiveness of the educational

work of the certified teacher, assessment of the level of professional activity of the teacher at the level of the methodological association, determining the rating of the teacher by his students (for universities - students) and their parents.

## Conclusions

Based on the results of processing theoretical sources, we can draw conclusions:

- certification of teachers - a special kind of assessment of professional activity of teachers, aimed at improving productivity and interest of teachers in improving professional skills, rational and efficient use of labor resources in the school, social protection of teachers;

- certification of teachers can be carried out using various forms: comprehensive assessment, questionnaires (self-assessment, self-development, professional needs), portfolio, technology "Methodological portfolio", test tasks, methods, questionnaires, psychological exercises, etc. ;

- the system of development of professional reflection in the process of attestation of pedagogical workers requires special attention and development of methodical support.

Beginner teachers have an additional opportunity to develop professional reflection in such a form of methodical work as the school of a beginner teacher. Its main tasks are the creation of continuous professional development of a young teacher, assistance in the formation of an individual style of creative activity, an increase in the professional status of young teachers, the formation of an adequate self-assessment of their own achievements, stimulation and development of creative activity, the study of innovative ideas and experience in the field of education. Meetings of the school of a beginner teacher can be held on the following topics: requirements for the design and formation of educational and methodological support, assessment of student achievement, work planning, work with professional literature, pedagogical innovations, personality-oriented learning, interdisciplinary links. The result of the school of a beginner teacher is the mastering of practical skills necessary for the work of a teacher, adequate self-assessment of their own achievements, building their own path of professional growth.

An interesting form of methodical work is the school of pedagogical skills, which unites creatively active teachers with their own vision of ways to implement the educational process. Participants of the school of pedagogical skills usually have high results of practical activity, constantly improve their

professional skills. Its activities are aimed at giving teachers the opportunity to practically master the necessary professional skills and abilities, which in turn expands the boundaries of professional competence, skills and culture of teachers. Schools of pedagogical skills can be conducted in the following forms: elaboration of scientific and methodical literature, acquaintance with work experience, practical classes, interviews, discussions, seminars.

Professional reflection of teachers develops spontaneously during the work of the creative group that brings together experienced teachers interested in a common professional work. The tasks of the creative group are to expand and deepen their own knowledge and knowledge of students in the subject by analyzing the professional literature, the disclosure of methodological patterns of work on the study of the subject, the development of methodological advice.

The analysis of the purpose, tasks and structure of methodical work of various educational institutions gave the chance to define the basic purpose, to essentially supplement tasks and structure of methodical work of college.

The analysis of such forms of methodological work of a pedagogical college as an analysis (mutual analysis) of the lesson, the work of the subject and cycle commission of teachers of higher educational institutions of I-II levels of accreditation, certification of teachers, indicates that there is no purposeful development of professional reflection of college teachers, the importance of special development of professional reflection is not recognized, which means that the effectiveness of the considered means is insufficient.

Thus, the development of a system of means for the development of professional reflection of college teachers in the process of methodological work is relevant.

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The author 4 compiled a list of literature of domestic scientists.

The author 5 compiled a list of literature of foreign scientists.

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