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Formation of research competence of students in the process of problem-based learning

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General description of the research

Relevance of the research. The orientation of Russia to take its rightful place in the international division of labour, objectively requires early training of professionals able to meet the challenges of the innovative development of the country, incorporating not only current but also future needs of the economy and society of the modern system for graduates of higher education must possess the competencies tos would enable them to find innovative solutions to emerging issues, and challenges. Andssledovatel'skaja component is gaining more weight in the structure of the readiness of the future expert socio-professional activity. Meanwhile, the strategy of innovative development of Russia until the year 2020 emphasizes that "TSelenapravlennaja work on the development of competences in the field of research and development, as well as motivation to innovate in Russian educational institutions started only in recent years. In connection with this socially and personally meaningful requirement for graduates of high school becomes the formation of their Research competence.

The development of research skills identity has been the subject of attention in many works on Psychology (A.a. Verbitsky, Vladimir N. Druzhinin, Y. Kuljutkin, t. Kudryavtsev, a.m. Matyushkin, J.a. Ponomarev, A.i. Savenkov, g.s. Suhobskaja, etc.) and pedagogy (S.i. Arkhangelsky, v. Andreev, R.a. Valeeva, V.i. Zagvjazinskij, l.a. Kazantseva, I. Lerner, m.i. Makhmutov, F.l. Ratner, p.n. Osipov, m.n. Skatkin , etc.).

Various aspects of research competence and ways of its formation were studied in the works of H.p. Abdulovoj, E.y. Girfanovoj, A.a. Gubaidulina, S.a. Karpov, O.r. Kudakova, Yulia Makarova, e.v., Nabievoj E.v. Novikova, A.i. Savenkova, L. Osipenko, S.i. Veronika Osipova, t.m. Talmanovoj, Ushakov, e.v. Fes'kovoj, I.d. Chechel and other researchers.

In accordance with the requirements of the activity approach formation research competence requires the inclusion of students in the search operations. This means that as the leading means of building research competence advocate active learning technology, including one of the most famous is the problematic one (I. Lerner, m.i. Makhmutov, a.m. Matyushkin, etc.). Theory and technology of problem-based education developed in the writings of modern researchers (V.i. Andreev, v. Gabdulhakov, T.b. Grebenyuk, G. Ibragimov, e.m. Ibragimova, v. Katashev, g. Rudik, m. Choshanov, n. Chapaev, D.m. Shakirova, etc). in recent years a number of dissertation research on the various aspects and further development of the theory of problem-based learning (V.f. Antes, V.m. Gulyaev, e.v. Kovalevskaya, Vladimir Larionov, a. Nesterenko, Yuri Surin, V.a. Tubal'ceva, N. Slepuhina, t. Shajhullin, etc.).

In foreign pedagogy troublesome has been the focus of many researchers j. Dewey, j. Brunner, sudden stall as nobody wants, l. Klingberg et al. at the present stage in the educational system of the United States has developed the theory of constructivism, according to which education is built by design (as teacher and students) and solve the problems of real life tasks, the facts and evidence of practical situations, original materials, etc. within this area a model for research training (cyclic model) involving the Organization of educational process in the form of a research cycle-the problem-hypothesis-decision-annex-new problem, etc. " (Zuga K.).

Great development in foreign pedagogy find the theory of cooperative group learning (Sharan S. Davidson N, etc.), promising-transforming learning (j. Mezirov), theory of multiple intelligences (h. Gardner), etc. An analysis of foreign theories of learning, we can conclude that regardless of the substantive ideas, virtually all of them require the use of active learning methods, and forms to include students in the solution of educational problems related to life experiences that reflect reality.

Analysis of the conducted researches shows, that has accumulated a large array of scientific knowledge about various aspects of problem-based learning. At the same time, were left unexplored issues impact on the development of problem-based learning research competence of students.

Deficiencies of pedagogical theory and practice give rise **contradictions,** who determines the main direction of our research:

-between increased demands of society, the State and the employers to the formation of students ' research competence as a willingness and ability to vision, analysis and solution of professional and life problems and insufficient research sformirovannost'ju competence of graduates of higher education;

-between pedagogical possibilities of problem-based learning in shaping the research competence of students on the one hand, and the absence of scientifically based didactic conditions for effective use of problem-based education to form the research competence of students.

The problem of the study: What are the educational environment conducive to the successful implementation of the pedagogical possibilities of problem-based learning in shaping the research competence of students of the University.

The purpose of the study: develop and justify the teaching conditions of research competence of students in the process of problem-based learning.

Object of research is the process of problem-based learning in high school.

Subject of research — teaching conditions of research competence of students of University in the process of problem-based learning.

The hypothesis of the research- formation of research competence of students the issues training would be effective if:

- identify the scope of research competence and describe the levels of development of research competence of students;

-highlight the possibility of pedagogical forms and methods of problem-based learning as didactic means the formation of research competence;

-didactic conditions strengthening the educational opportunities the following problem-based learning:

during the theoretical training (for lecture and seminar classes)-Organization of cognitive activity in accordance with the dynamic structure of research activities and taking into account the levels of development of the research competence of students; use of didactic receptions, providing motivational engagement of all students in training and a high degree of autonomy learning at all stages of the research cycle; interactivity; personal and professional significance of solvable educational problems;

in the course of practical training- mastering methods and techniques to study the formation of innovative experience of research competence; development research projects consistently increasing complexity.

Objectives of research:

1. Disclose the content and levels of development of research competence of students.

2. To justify the role and place of problem-based learning as a means of building research competence of students.

3. Identify opportunities distressed lectures in shaping the research competence of students and teaching conditions to strengthen them.

4. identify possible problematic workshops and independent works in shaping the research competence of students and teaching conditions to strengthen them.

5. Develop and justify the complex teaching conditions of formation of the research competence of students in the process of problem-based learning.

M**etodologicheskuju the basis of** study constitute the main provisions of the general approaches: systemic (A.g. Asmolov, v. Afanasiev, M.s. Kagan, etc.), student-activity (P.o. box Halperin, Vladimir Davydov, V. Ilyin, a.n. Leontjev, Vladimir Serikov, S.l. Rubinstein, etc.), competent (V.i. Bajdenko, A.a. Verbitsky, Zeer Je.F., i.a. Winter, g.i. Ibrahimov, A. Novikov, P.p. Terehov, a.v. Farmhouse, etc.), integrative (V.s. Bezrukova, m.n. Berulava, A.y. Daniluk, M.i. Makhmutov, n. Chapaev, N.a. Chitalin, etc.).

Theoretical basis studies were the main provisions of the didactics of higher school (V.i., Zagvjazinskij V.i., Andreyev A.a. Verbitsky, V.m. Vergasov. V.g. Katashev, V.v. Kondratyev, I. Lerner, m.i. Makhmutov, R.a. Nizamov, N.d.

Nikandrov, F.l. Ratner, V.v. Serikov, v. Popkov, Postaljuk N.Yu., R. Safin, etc.), system-dynamic theory of activity (A.d. Shakurov), psychological theories of personality development (Ca Abul'hanova-Slavskaya, S.l. Rubinstein, Hp Vygotsky, B.f. Lomov, l. Popov, a. Prokhorov, etc.); the main provisions of the theory of lifelong education (A. Novikov, Y.a. Bushes, e.m. Ibragimova, etc.), the theory of problematic (D.v. Vil'keev , I. Lerner, m.i. Makhmutov, m.n. Skatkin), project (V.s. Bezrukova, G.l. Illin, a. Novikov, K.n. Polivanova etc.), context (A.a. Verbitsky), concentrated (G.i. Ibragimov), unit (M.a. Choshanov, Pyotr Tretyakov et al.) training.

Research methods : theoretical (analysis, synthesis, simulation, abstraction, generalization, analogy, migration, etc.), empirical (questionnaire, observation, testing, research and experimental work, a study of the training documentation , etc.), mathematical-statistical methods of processing the data received.

Validity and reliability the results of the study are provided with correct selection of methodological frameworks and methods research; dokazatel'nost'ju and consistency of its results; the conduct of scientific research in unity with the author, enabling check the correctness of the theoretical positions in the real process of preparing future teachers; using the methods of mathematical statistics for handling empirical data.

Research Base. The study was conducted on the basis of the theory and methods of teaching law, Law Faculty of Kazan Federal University, Department of pedagogy and psychology CHOW in "Academy of social education» (Kazan).

Stages of research:

Work performed in the period from 2012 to 2016 Gg. and consisted of three stages.

In the first phase (2012-2013) carried out selection, justification and conceptualization problems and research topics based on the study of philosophical, psychological, educational and methodical literature. Developed the program and methods of experimental work, preparation of necessary diagnostic tools. Identify content, composition and levels of development of research competence of students.

In the second phase (2013-2014) was carried out pedagogical experiment with the aim to verify the hypothesis of the study, both theoretically and experimentally substantiated teaching conditions of research competence of students in the process of problem-based learning. Work continued on the study of scientific and educational literature and analysis of the subject of the study.

In the third phase (2014-2016) conducted work on processing and interpreting experimental data recorded the results of theoretical and experimental research. Work continued on the approbation of the results of the study.

The scientific novelty the study consists of the following:

1. On the basis of system-dynamic theory of activities explaining the dynamic and cyclical activities interaction needs and barriers, disclosed the contents of the concept of "research competence" as a student-determined characteristics, representing the willingness and ability of the individual to implement research based on integrative application of values, personal and meaningful knowledge in a certain area and research skills (to navigate in new situations, set a goal and plan activities to propose and justify a hypothesis Choose the most appropriate methods of proof of hypotheses, self-monitoring and self-evaluation, submit the results of the study) to solve the problems of the theoretical and practical nature.

2. Define the General (motivational, cognitive, activity) and private (degree equivalent level research competence relevant to the purposes of the society; degree formed Ness integrative components of research competence; degree of Resi Ness trainees during the training and learning activities and research activities) criteria of research competence. Qualitative characteristic revealed levels of development the research competence of students (low, average, above average, high), the knowledge of which is necessary for assessing the State of the design objectives and the selection of adequate teaching tools and techniques of forming research competence. It is shown that the transition of research to a higher level of competence is associated with increasing the role of domestic internal motivation motive system teaching, formation and development of the creative component of the research.

3. Four phase development theory of problem-based learning in patriotic education: 1) intensifying training (middle of Xix-beginning of XX centuries), 2) developing research learning method (1913-1930-ies); 3) formation of problem-based learning approach, method, type, and didactic systems (1960-1980); 4) problematic as an integral feature of modern theories and technologies of active and interactive learning (from the end of the 90-ies of XX century till present).

4. The role and place of problem-based learning in shaping the research competence of students. They are related to the intrinsic characteristics of problem-based learning as didactic system (objectives, functions, the existence of a multilevel system of methods and forms of education, openness to innovation, etc.) which can organically combine reproductive and productive activities of the students. Given that problems in modern conditions is the norm of pedagogical (and generally any professional) activities in work proven fact objective of increasing the role of problem-based learning as a modern type of training.

5. established and developed pedagogical opportunities problematic lectures in shaping the research competence of students (predominant influence on

the development of value-an indicative component attitudes research competence as values due to the problematic of the educational material, training solutions to the problem of the teacher in the form of dialogical communication demonstration teacher personal interest, etc.) and teaching conditions for their gain (emphasis on the system of motivation techniques, aktualizirujushhih educational needs due to the impact on the emotions and feelings of the students , professional and vital significance of solvable problems; use presentations in conjunction with the word teacher, interaction techniques, operational feedback).

6. established and developed the pedagogical possibilities of problem seminars (seminar-discussion, workshop-study seminar-debate, an expert workshop, seminar-game) in shaping the research competence of students. The main requirements for the applicable means to enhance research capacity workshops are: a) inclusiveness of all students in training due to the structure of compulsory combination of individual and team work; b) ensuring a high degree of autonomy through students perceptive dominance techniques mental activity-analysis, comparison, analogy, the reliance on personal experience, ideas, problem and rhetorical questions, the presentation and justification of the results of their own individual and group activities, etc.; in the decision of problems of) professional, vital and personal significance.

7. The effectiveness of the teaching conditions of developing problem-based learning opportunities, depending on the types of training (theoretical and practical). In the process of theoretical training (for lecture and seminar classes)- Organization of cognitive activity in accordance with the dynamic structure of research activities and taking into account the levels of development of the research competence of students; use of teaching techniques, providing motivational engagement of all students in training and a high degree of autonomy learning at all stages of the research cycle; interactivity; personal and professional significance of solvable educational problems;

in the course of practical training- mastering methods and techniques to study the formation of innovative experience of research competence; development research projects consistently increasing complexity.

Theoretical significance the results of the study is that:

revealed essence, structure and levels of development of research competence as a student-activity of the integrative properties and key competence of the modern high school graduate;

studied and systematized. factors (design and implementation) and didactic terms (informative, organizational, procedural) in order to ensure more efficient formation of the research competence of students in the process of problem-based learning;

set out structurally-informative specifications and features active and teaching are grounded interactive forms implementation of lecture and seminars as a means of building research competence of students that enriches the theory of problem-based learning;

introduced by the contribution to the development of the theory of task-developing training through the identification and justification of the pedagogical possibilities of active and interactive forms of its implementation as a means of building research competence of students.

efficiently used as regards the research complex theoretical (analysis of scientific and educational literature, study and generalization of advanced pedagogical experience, simulation, synthesis, interpretation) and empirical (questionnaire design, testing, pedagogical experiment) research methods and statistical methods of processing results of pedagogical experiment.

Practical significance the study is to focus on improving the learning process as a means of building research competence of students; in the definition of didactic means and conditions of formation of the research competence of students; development of recommendations on implementation of high school teachers developing function of problem-based learning and the formation of the research competence of students. implementation developed by the continuing process of building research competence of students in problem-based learning at the Faculty (Department of the theory and methods of teaching law) of Kazan Federal University contributed to the improvement of the efficiency of the process of formation of the research competence of students.

Theoretical and experimental research results can be embedded in a system of teachers of high school. Results of research partially implemented in the educational process at FGCU "Kazan national research University," CHOW "Academy of social education». Developed in the thesis can be used in the design process of the educational process to improve teaching materials in terms of strengthening their research focus; teachers educational institutions of higher education and secondary vocational education, skills training for teaching staff.

Provisions for the protection of:

1. Research competence emerges as the willingness and ability of the individual to implement research based on integrative application of values, personal and meaningful knowledge in a certain area and research skills (to navigate in new situations, set a goal and plan activities to propose and justify a

hypothesis, to choose the most optimal methods of proof of the hypothesis, self-monitoring and self-evaluation, submit the results of the study) to solve the problems of the theoretical and practical nature.

Research competences structurally consists of four interrelated components (indicative value, projective-the creative, domain-transformative, control and correction), which ensures the formation of synthesis is purposeful experience research. The leading features of research competence Act methodological, educational, and cultural value of the function.

2. The role and place of problem-based learning in shaping the research competence of students at the present stage of development of education increase objectively because: a) the challenge of becoming the norm in professional activity; b) basic characteristics of problem-based learning as didactic system (orientation on the formation of creative thinking, the presence of a multilevel system of methods and forms of education, openness to innovation, etc.) are adequate to the objectives and structure of research students. The process of the formation of the research competence of students provides consistent and phasing requirements principle of reality during an auditorium (lecture, seminar and workshops) and Cadet (independent work, a practice course and the final qualifying work) learning activities of students.

3. Pedagogicheskie features distressed lectures in shaping the research competence of students lies in its influence on the development of priority value indicative of a component due to the problematic of the educational material, training solutions to the problem of the teacher in the form of dialogical communication, demonstrating them personal interest to disclose the training problem. Strengthening teaching capacity problem in shaping research lectures competence of students includes: use of motivation techniques, adequate structure of motivational basis training activities on the emotions and feelings of the students; showing professional and vital significance of solvable problems; the combination of the words of the teacher and presentations; interaction; operational feedback.

4. Nedagogicheskie possible problem seminars (seminar-discussion, workshop-study seminar-debate, an expert workshop, seminar-game) in shaping the research competence of students are in their impact on the development of its projective-creative, transformative subject-and control-correctional components. To strengthen research capacity workshops need to ensure involvement of all students in training due to the mandatory structure of a combination of individual and team work; b) high degree of cognitive independence of students by dominance in training activities, techniques of active mental activity-analysis, comparison, analogy, the reliance on personal experience, ideas, problem and

rhetorical questions, the presentation and justification of the results of their own individual and group activities, etc.; in professional life and) personal significance of solvable problems.

5. Educational conditions forming the research competence of students in the process of problem-based learning: theoretical learning process (for lecture and seminar classes)-Organization of cognitive activity in accordance with the dynamic structure of research activities and taking into account the levels of development of the research competence of students; use of teaching techniques, providing motivational engagement of all students in training and a high degree of autonomy learning at all stages of the research cycle; interactivity; personal and professional significance of solvable educational problems;

in the course of practical training- mastering methods and techniques to study the formation of innovative experience of research competence; development research projects consistently increasing complexity.

Testing and introduction the results of the study. the study of its main provisions and results were discussed at meetings of the Department of theory and teaching methods of the Faculty of law of Kazan Federal University; reported at international (2014, 2015), Russian (2015) and University (CFU) scientific-practical conferences; at the annual scientific conferences of young scientists and specialists of CFU (2012-2015), the meetings of the Department of theory and teaching methods of the Faculty of law of Kazan Federal University (2013-2016).

Structure of the thesis. Thesis volume 237 pages consists of an introduction, two chapters, conclusions, bibliography (192 items) and four annexes.

The main contents and findings of the study

In the introduction the actuality, articulated purpose, object, subject and tasks of the research, its scientific novelty, the theoretical and practical importance, are basic provisions for protection.

In the first chapter -"**Shaping the research competence of students as a pedagogical problem**" disclosed the contents and the essence of the concept of "research competence, criteria and levels of development of research competence of students, as well as a justification for the theory and technology of problem-based learning as a means of developing research competence.

The study showed that the concept of "research competence" in pedagogy is treated ambiguously. On the basis of selected researchers reason to define two approaches to the definition of "research competence. In the first approach, the definition is based on the concept of "competence" and, in this context, research competence is regarded as one of the key competences (along with other key

competences). The protagonists of the second approach come from another base concept is "research" and interpret the research competence of both the willingness and ability of a person to design and implement research activities. However, both approaches have no persuasive theoretical justification.

As a methodological basis for identifying entity research competence was chosen by systematic-dynamic activity theory (r. h. Shakurov), explaining the dynamic and cyclical activities interaction needs and barriers. In accordance with this theory, the structure of research competence is seen as interrelated set of value-indicative, projective-the creative, transformative subject-and control-correctional components. It acts as the willingness and ability of the individual to implement research based on integrative application of values, personal and meaningful knowledge in a certain area and research skills (to navigate in new situations, set a goal and plan activities to propose and justify a hypothesis, most optimal'nye methods of proof of the conjecture, self-monitoring and self-evaluation, submit the results of the study) to solve the problems of the theoretical and practical nature. Research competence is characterized by its leading features (methodological, educational, cultural, value) associated with its intrinsic properties (flexibility, nadpredmetnost', multidimensionality, predictability, preventive, innovativeness).

Qualitative characteristic revealed levels of development the research competence of students. Found that the vast majority of students (80%) Research competence formed on low (first and second) levels; at 13.8% at the third level and only 5.4% of the students are the fourth level. This suggests that in school practice students clearly insufficient are involved in research activities. In addition, it follows that the first courses in the University also dominates the performing activity of students. The lectures and seminars the teachers do not give due attention to the formation of students ' research skills in nature. Insufficient attention to the formation of the research competence of students due to other reasons, and the fact that in theory teaching high school out of view of researchers were questions intensify cognitive activity of students by means of problem-based learning, development of didactic means and conditions of realization of the developmental potential of active forms of lectures, seminars and independent of classroom and extracurricular work of students.

It is proved, that in the modern school of problematic learning becomes its attribute property. At the same time, improved high school is largely constrained by the lack of razrabotannost'ju on a number of issues implementing teaching opportunities for problem-based learning in shaping the research competence of students. Teachers do not always correctly identify the goal of building research competence of students in relation to the specifics of ongoing classes, experience

considerable difficulties in defining the research capacity of problem-based learning within the taught subject. Difficulties arise in relation with teaching tasks, development of research competence of students. With only a few teachers implement the practice of problem-based learning opportunities in shaping the research competence of students. However, this innovative experience also requires synthesis to develop sound implementation technology opportunities for problem-based learning in shaping the research competencies of the students.

The second chapter is "seizing opportunities of basic forms and methods of problem-based learning in shaping the research competence of students» revealed the role and place of problem-based learning, pedagogical possibilities of the formation of the research competence of students and teaching conditions of strengthening them in the process of problem of lecture and seminar classes; program and presented the results of the pilot study investigated the problem.

Study showed that in actual practice, graduate school most of the teachers do not use sufficiently potential major forms of organization learning in shaping the research competence of students, only 15-20% of the students are non-active learning in lectures and seminar classes. Development of the research competence of students in lectures is carried out sporadically from time to time. It is not the system respectively is not in sight focus on teachers. This situation stems from the fact that teachers are insufficiently proficient knowledge of pedagogical features lectures, seminars and independent work in shaping the research competence of students. In pedagogical science questions to improve them, search for ways to strengthen educational functions, conform with the requirements of the modern stage of development of education, remained virtually out of sight.

The main directions of innovative experience of improving lectures as a form of learning, critical and challenges shaping the research competence of students (giving lectures the problematic nature of interactivity, delivering a dialogical self; interaction of participants in the educational process, productive learning activities of students; integration of lectures with other forms of training; increased educational opportunities for traditional lectures through the use of techniques of revitalization of the cognitive activities (professional orientation, the reliance on personal experience, emotion, a combination of the words and the clarity, etc.).

Subject lecture as a form of training is realized mainly through the use of a combination of exemplary practices, dialogical method and partially monologicheskogo teaching method. For the effective implementation of its motivational and developmental capacity issues lecture requires special pedagogical instrumentation through the use of system of motivation techniques.

Found that special attention should be paid to supporting elements such as update requirements, implementation of the Opera Forum feedback.

Comparison of dynamic structure activity and structure as a form of teaching lectures enabled to state that not all stages of research are equally able to provide motivational. In the best position to provide indicative has the lecture phase and the phase of programming. To a lesser extent, ensured the final phase-control and adjustment. With regard to the execution phase of the programme, on which the maintenance of the endeavour to achieve the goals is the main motivational task, the teacher's role is very high here, his personal competencies, skills in time to pose rhetorical questions and issues, compelling examples of life experiences to confirm theoretical calculations, etc. due to the limited capacity of the lecture in shaping the research competence of students, it is necessary to use the potential of other organizational forms-seminars and independent work.

Pedagogical opportunities seminars in shaping the research competence of students related to the fact that they objectively suggest independent active learners both in the preparatory process (work on primary sources and other literature, design, etc.) and during (report message, asking questions, value judgments, etc.) but their implementation requires compliance with OC Yes psycho-pedagogical conditions: the optimal level of complexity of the issues and tasks; praktikoorientirovannost', communication with real and virtual reality; the use of techniques, methods and tools to facilitate the creation of a positive emotional background, which in turn contributes to the productive activity of the brain; freedom for creativity; individualization of assignments and tasks; the Organization of meaningful communication and exchange of views; underline value learner perspective, unique vision.

Developed teaching conditions strengthening the developmental potential of problematic forms of seminars (seminar-discussion, workshop-study seminar-debate, an expert workshop, seminar-game) in shaping the research competence of students. The main requirements for the applicable means to enhance research capacity workshops are: a) inclusiveness of all students in training due to the structure of compulsory combination of individual and team work; b) ensuring a high degree of autonomy through students perceptive dominance techniques mental activity-analysis, comparison, analogy, the reliance on personal experience, ideas, problem and rhetorical questions, the presentation and justification of the results of their own individual and group activities, etc.; in the decision of problems of) professional, vital and personal significance.

The study showed that there is a certain specificity in developing problem-based learning opportunities for implementation depending on the types of training (theoretical and practical). Thus, during the theoretical training specifics of

problem-based learning is that students perform basically the search activity related to answers to problematic questions, the decision problem tasks and implementation of problematic tasks. In order to strengthen the research capacities of such tasks and jobs they need to give praktikoorientirovannyj and professionally-directed nature and structure of the training activities to build depending on the level of reality and its dynamic and motivational sub-structure. From course to course during the theoretical training necessary, research has shown that increasing the proportion of self project activity students enhance their interdisciplinary nature and connect with real life and professional practice.

Of particular importance is the problem during training the students practice. At the stage of passive pedagogical practices, the main challenge is to integrate the capabilities of problem-based learning and project-based learning in order to familiarize and in-depth examination of research experience for teachers of basic schools. To do this, students perform relevant research of small projects (e.g., development of methodology for assessing research competence of teachers, etc.). We found that this integration gives better results if, before the students on the passive teaching practices they learn theoretical fundamentals and methodology study innovative pedagogical experience to shape the research competence of students. Used for this active form of learning module "theoretical framework and methods of study innovative pedagogical experience».

During active pedagogical practices the main objective was the practical development of students research experience. To do this, apply such forms of integration principles of problem-based and project-based learning, as the development of teaching projects. For example, such projects have been proposed: "development of problematic lesson", "development of diagnostic tools research competence of students and others. These projects, in turn, were part of the core project of each student, related to graduation qualification work.

Developed teaching conditions of research competence of students in problem-based learning process passed **experimental-pilot testing**, during which revealed their effectiveness.

The independent variables were didactic conditions conducive to strengthening educational opportunities for problem-based learning in shaping the research competence of students.

В качестве зависимых переменных выступали: уровень развития мотивации исследовательской деятельности; уровень развития критичности мышления; уровень развития исследовательской компетенции, а также уровень усвоения предметных знаний и умений.

Эксперимент проходил на базе отделения правового образования юридического факультета Казанского (Приволжского) федерального

университета, а также факультета педагогики и психологии Академии социального образования (г. Казань) в течение трех лет (2012-2015 гг.). В экспериментальном обучении приняли участие 3 экспериментальные и 3 контрольные группы. Общая выборка составила 158 человек.

The experiment consisted of four phases: preparatory, ascertain, forming and processing stage of empirical data.

Since the formation of personality traits is relatively long, forming stage of experiment should hold for at least one academic year. In our study, he covered the theoretical future Bachelors students first and second course (respectively second, third and fourth semesters). With regard to the practice and graduation qualification work (third and fourth training courses), we monitored the impact of the final qualifying works students involved in experimental work. This was done in order to identify the extent to which formed during the theoretical training of research skills on the quality of the WRC.

Constructing the experiment was conducted in two stages. The *first sub-stage* formative experiment (January 2014-June 2014 g.) the main task was to test the effectiveness of a coherent system of problematic lectures, seminars and independent work in the formation of the components of the research competence of students. In the experimental groups was organized in targeted problem problem system training lectures and various kinds of seminars. In the control groups were held traditional lectures and seminars, in which elements of reality also occurred, but they were sporadic, problem situations if there were, then sporadically, during lessons. Thus, we strive to ensure that the difference between experimental and control groups took place on the basis of the presence or absence of special activity of the teacher on the implementation of the requirements of the principle of reality.

The *second sub-stage* formative experiment (September 2014-December 2014, 2002) addressed the task of verifying the effectiveness of problem-based learning implemented taking into account specifically created teaching conditions (structuring of cognitive activity of students in accordance with the dynamic structure and motivational basis of research activities, etc.) in shaping the research competence of students.

Schematic of the experiment here was traditional: in experimental group of problematic learning built with the inclusion of verifiable teaching conditions and in control-problem education without those conditions. Both groups fought the same teachers, so the factor of personality of the teacher is not required to eliminate. At the end of each of the stages was conducted Diagnostics for selected criteria were aggregating data using Pearson criterion (Chi-square).

Analysis of the dynamics of *indicative value component* (table 1) showed that the number of students with high levels of motivation (third and fourth) in the

experimental group at the end of the experiment is significantly higher than in the control (65.0% and 23.0%).

Table 1

The dynamics of motivating research students of the experimental and control groups (ABS/%)

Levels	1		P		W		1U	
Group	Beg. stage.	Ulti. stage	Beg. stage	Ulti. stage	Beg. stage.	Ulti. stage	Beg. stage.	Ulti. stage
E.g. (80 people)	4/5.0	4/5.0	48/60.0	24/30.0	20/25.0	28/35.0	8/10.0	24/30.0
K.g. (78 INH.)	4/5.1	12/15.4	46/59.0	48/61.6	22/28.2	10/12.8	6/7.7	8/10.2

With a probability of 95.0% differences proved to be reliable (i.e.$_{OBS.}$ = 7.836 , that the more critical values of t$_{.}$ = 7.815) and therefore verifiable experimental factors have a noticeable influence on the value of an indicative component research competence.

Qualitative analysis revealed that students ' experimental group became dominant motives directly related to research: "I love to look for different ways to solve problems," like the inspirational educational activities ", etc. with regard to the students in the control group, they have dominated the motives, not directly related to the research activities:" the pursuit of self-knowledge "," the quest for higher education ", etc.

Study on the criterion of "critical thinking" (table 2) indicate that if at the beginning of the experiment "is very critical" were 14 students in the experimental group (17.5%), by the end of their number rose to 26 people (32.5%) occurred at the expense of the corresponding reduction in the number of students at the level of "Conformal with rather" with 36 people in early before the 16-in the end (-25.0%). As for the control group, the number of students with a high level of criticality of thinking ("very critical") has not changed-in the beginning and end of the experiment it amounted to 12 students (15.4%). However, there has been a slight increase (7.5%) number of students differ partly critical thinking ("critical"). Statistical analysis showed that the difference in experimental and control groups reliably at 0.05 significance level (i.e. the$_{OBS.}$ = 7, 520, at t$_{.}$ = 5, 99).

Table 2

Criticality assessment of thinking students (ABS/%)

The number of students		Very critical	Rather, the critical	Conformal with soon
E. G. (80 people)	The beginning of the	14/17.5	30/37.5	36/45.0
	The end	26/32.5	38/47.5	16/20.0
	the effect of	+12/+150	+8/ -1050	-20/ -25.0
To. G. (78 INH.)	The beginning of the	12/15.4	30/38.5	36/46.1
	The end	12/15.4	32/41.0	34/43.6
	the effect of	0/0.0	+2/+2.5	-2/ -3.5

The level of research competence as integrative properties defined using integrated test, developed by Vladimir Arguchinskiy S.a.). The results showed that at the end of the experiment, the number of students with high levels of experimental groups (95.0%) significantly higher than in control (59.0%) (table 3). Checking on the accuracy of the data presented (at the level of significance of 0.05) showed that the differences are statistically significant (i.e.,$_{OBS.}$ = 8.967, at t. = 7.815).

Table 3

The dynamics harmonic levels research competence of students during formative experiment (ABS/%)

Group and picks	Levels of research competence							
	1		P		W		1U	
	Beg. stage	Ulti. stage.	Beg. stage	Ulti. stage.	Beg. stage	Ulti. stage	Beg. stage	Ulti. stage
E.G. (80 people)	3/3.7	0/0.0	31/38.8	4/5.0	39/48.7	54/67.5	7/8.8	22/27.5

K.G. (78 INH.)	2/2.7	4/5.1	30/38.5	28/35.9	40/51.3	38/48.7	6/7.7	8/10.3

The study showed that the purposeful work on the formation of the research competence of students positively affects teaching level: at the end of the experiment, the number of students with high levels of teaching in the experimental groups (65.0%) significantly higher than in control (23.1%) (table 4). Estimation of reliability of the data obtained using the chi-squared criterion allowed state that the difference between the results of the experimental and control groups is statistically significant at the 0.05 significance level (i.e. the$_{OBS.}$ = 7.838; T_{KRIT}= 7.815).

Table 4

Dynamics of levels of teaching students of experimental and control groups (ABS/%) (discipline-"learning theory, educational law, 2013-2014; 2014-2015 academic year).

Group and picks	Levels of teaching							
	(I)		(II)		(III)		(IV)	
	the beginning of the	The end	the beginning of the	The end	the beginning of the	The end	the beginning of the	The end
Experimental (80)	6 7.5	4 5.0	34 42.5	24 30.0	32 40.0	28 35.0	8 10.0	24 30.0
Control (78)	5 6.4	12 15.4	32 41.0	48 61.5	32 41.0	12 15.4	9 11.6	6 7.7

In the opinion of the presents the main findings of the study and outlined the prospects for the further consideration of the issue.

1. theompetentnostnaja paradigm of higher education development objectively orients itself on the development of graduate research competence as integrative properties identity, structurally includes interrelated components (indicative value, projective-the creative, domain-transformative, control and correction), which ensures the formation of synthesis is purposeful experience research, willingness and ability of the graduate research in conditions of uncertainty and dynamic phenomena and processes. Qualitative characteristic revealed levels of research competence of students, the knowledge of which allows you to group students by level and implement an adequate choice of the

development of didactic means and methods of realization of the developmental capacity of problem-based learning technologies.

2. At the present stage of development of education increase objectively the role and place of problem-based learning in shaping the research competence of students because: a) the challenge of becoming the norm in professional activity; b) basic characteristics of problem-based learning as didactic system (orientation on the formation of creative thinking, the presence of a multilevel system of methods and forms of education, openness to innovation, etc.) the most adequate to the objectives and structure of research students.

3. Produces research competence of potential problematic lectures (problematization of learning material, educational and scientific solution to the problem of the teacher in the form of dialogical communication, demonstration of them personal interest to be disclosed at a lecture the problem) lies in its influence on the development of priority value indicative component. Strengthening teaching capacity problem in shaping research lectures competence of students is possible due to the application of the system of motivation techniques, adequate structure of motivational basis training activities on the emotions and feelings of the students; display professional and vital significance of solvable problems; a combination of the words of the teacher and presentations; give a lecture interactive nature; operational feedback.

4. Nedagogicheskie possible problem seminars (seminar-discussion, workshop-study seminar-debate, an expert workshop, seminar-game) in shaping the research competence of students are in their impact on the development of its projective-creative, transformative subject-and control-correctional components. In order to enhance research capacity workshops need to ensure involvement of all students in training due to the mandatory structure of a combination of individual and team work; a high degree of cognitive independence of students by dominance in training activities, techniques of active mental activity-analysis, comparison, analogy, the reliance on personal experience, ideas, problem and rhetorical questions, the presentation and justification of the results of their own individual and group activities, etc.; professional and personal life, the significance of solvable problems.

5. Educational conditions forming the research competence of students in the process of problem-based learning: theoretical learning process (for lecture and seminar classes)-Organization of cognitive activity in accordance with the dynamic structure of research activities and taking into account the levels of development of the research competence of students; use of teaching techniques, providing motivational engagement of all students in training and a high degree of

autonomy learning at all stages of the research cycle; interactivity; personal and professional significance of solvable educational problems;

in the course of practical training- mastering methods and techniques to study the formation of innovative experience of research competence; development research projects consistently increasing complexity.

6. Proven that purposeful work on scientific and sound enhance the developmental capacity of problem-based learning in the University positively influences on the formation of the research competence of students. Analysis of the dynamics of different levels (levels of teaching, motivating, criticality of thinking, research competence in General) reveals the effect of interrelated impacts independent factors experiment.

7. the prospects for further study of the problem can be associated with the development of organizational and pedagogical mechanisms combining learning technologies optimize conditions forming the research competence of students, studying the impact of research activities on the quality of skills training for university graduates, the study of continuity in shaping research culture identity in the face of continuing education.

The main provisions of the thesis are reflected in the following published works:

Articles in peer-reviewed publications, recommended WAC Moin RF

1. Idijatov I.e. Research competence: basic characteristics of concepts/E.m. Ibragimova, I.e. Idijatov//education and self-development no. 4 (46) 2015. -P. 24-26 (0.3 p.l. p.l./0,2).

2. Idijatov I.e. Technology problem-based learning as a means of creating the research competence of students/I.e./Idijatov/education and self-development no. 4 (46) 2015. S. 69-71 (0.3 p.p.).

3. Idijatov I.e. Seminar as a means of creating the research competence of students/I.e./Idijatov/Kazan science, no. 11, 2015. -P. 261-263 (0.3 p.p.).

Scientific articles

4. Idijatov I.e. Subject lecture as a means of creating the research competence of students/E.m. Ibragimova, I.e. Idijatov//materials of International VI Mahmutovskih readings-Kazan, 2016.-p. 216-222 (p.l. 0.5/0.3 p.p.).

5. I.e. Idijatov to the issue of professional competence of teachers/I.e./Idijatov/postgraduate research works of the Faculty of law. Abdullin A.i.. Issue 14. -Kazan: Kazan University, 2013. -P. 249-253 (0.3 p.p.).

6. Idijatov I.e. Problem learning in higher education: development perspectives/I.e. Idijatov//science and peace: an international journal, no. 12 (28) 2015. -P. 85-86 (p.l. 0.2).

Articles in journals and collections of materials of scientific-practical conferences

7. Idijatov I.e. the effectiveness of problem-based learning in the process of preparing future teachers/I.e. Idijatov//Pedagogika Ta psihologija: science, Osvita, innovacii: zbirnik scientific Mizhnarodnoï robit scientific-praktichnoï konferencii (m. Lviv 14-15 grudnja 2012 roku):-Lviv: «L'vivs'ka pedagoichna spil'nota», 2012. -P. 59-61 (p.l. 0.2).

8. Idijatov I.e. the problematic approach to the formation of professional competence of the future teachers/a.v. Cherkasova, I.e. Idijatov//actual problems of modern pedagogical science: proceedings of the VII international scientific-practical Conference. December 17, 2012/researcher, ed. M. v. Volkov-Cheboksary: Moscow Institute of pedagogy and psychology, 2012. P. 95-97 (p.l. 0.2/0.1 p.p.).

9. Idijatov Content I.e. future teacher's professional competencies/I.e./Idijatov/science and modernity-2014: proceedings of the XXXII international scientifically-practical Conference/AGG. Ed. S.s. Chernova.-Novosibirsk: izdatel'stvo CRNS, 2014. -P. 76-80 (0.4 p).

10. Idijatov I.e. "to the question on the structure and content of the concept of" research competence/I.e./Idijatov/legal responsibility in the face of

international integration: proceedings of the Xth International scientifically-practical Conference of students and postgraduates (Kazan, 20-21 November, 2015.) /Compl.: D.a. Valeev, N.n. Makolkin, R.i. Sharipov, Yury Lukin, I.a. Kirillova. -Kazan: Kazan. Irkutsk, 2015. -P. 242-243 (p.l. 0.15).

11. Idijatov I.e. about trends in problem-based learning in modern higher school/I.e. Idijatov//collection of scientific journal publications "Globus»: III international scientific and practical Conference: "achievements and challenges of modern science» (December 3, 2015)-St. Petersburg: scientific magazine «Globus», 2015-s. 55-58 (0.3 p.p.).

12. Idijatov I.e. formation of professional competence of future teachers in the process of problem-based learning/I.e./Idijatov/ XI all-Russian scientific and practical Conference "Derzhavinskie readings": SA calendar/OTV. ed. O.i. Alexandrova.-m.: VGUJu (RPA Moj), 2016.-c. 575-576 (p.l. 0.15).

13. Idijatov I.e. methodical recommendations to teachers on the formation of the research competence of students in the process of problem-based learning/E.m. Ibragimova, I.e./Idijatov/methodological manual for teachers. -Kazan: Kazan. Irkutsk, 2016. -52 p. (p.l. 3.02/p.l. 2.0 aut.)