

Cette méthode de l'enseignement clinique pose deux difficultés;

La première difficulté est le temps. Il est plus rapide d'enseigner une matière de manière magistrale à des étudiants qui sont de simples spectateurs.

L'enseignement clinique exige davantage de temps puisque l'étudiant, par hypothèse néophyte, va hésiter, va s'interroger, avant de découvrir la solution.

Malheureusement, les volumes d'enseignement sont inchangés, quelle que soit la méthode d'enseignement choisie.

L'enseignant est confronté à un dilemme: soit traiter le cours de manière exhaustive et magistrale, soit traiter le cours de manière clinique, mais en choisissant de privilégier certains concepts au détriment d'autres, faute de temps.

La deuxième difficulté est la qualification de l'enseignant.

L'enseignement clinique implique non seulement une connaissance parfaite de la théorie, mais encore une capacité absolue à mettre en œuvre les principes théoriques dans le monde vivant.

Malheureusement, cette capacité de passer avec aisance d'un monde théorique à un monde pratique est parfois considérée avec réticence par certains esprits universitaires.

Les opposants expliquent que l'Université ne doit pas être une école de formation professionnelle. Les opposants expliquent que l'Université doit se préoccuper exclusivement des concepts.

Comment se préoccuper de concepts dissociés du monde réel dans lequel ils ont vocation à s'appliquer? Comment faire évoluer les concepts en méconnaissance de l'écrin pratique dans lequel ils sont mis en œuvre?

Si la recherche comme l'enseignement doivent s'inscrire dans la vie de la Cité. L'étudiant d'aujourd'hui sera bientôt un acteur à part entière la cité et l'Université doit lui donner les moyens d'agir.

C'est pourquoi, l'enseignement clinique du droit apparaît comme une méthode novatrice et porteuse d'avenir.

## **EXTRACURRICULAR PROJECT RESEARCH ACTIVITIES OF STUDENTS IN THE NATURAL SCIENCE**

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This article is devoted to the identification of the problems of organizing out lessons project activities of NIS students. The organizational system of project activity of students in

NIS, the competitive provisions of design works, the level of competence of the teacher and the motivation of students were analyzed. Based on the conducted research, the authors identified and substantiated the need to improve the design and research activities and proposed the creation of a unified approach (methodological recommendations), both in the organization of management of extracurricular project activities of students, and in the design of project works.

Keywords: project activities, school, research, methodology, competition.

### *Introduction*

At all times, the school system of education has been sensitive to changes in the society, which was reflected in the improvement of pedagogical approaches, the introduction of new disciplines into curricula, and the change of technologies in the lesson. The modern rapidly changing world defines such human qualities as self-sufficiency and responsibility, enterprise and initiative in the search for and decision-making of emerging problems. In such conditions, the possession of a certain amount of knowledge does not guarantee a graduate of the secondary school of rapid and successful adaptation to the current conditions of socio-economic life. The solution of this problem is the application of the competence approach adopted for the reform of the modern education system of the Republic of Kazakhstan. "An ideal graduate is not a broad-minded scholar, but a person, who knows how to set goals, achieve them, communicate effectively, live in an information and multicultural world, make an informed choice and bear responsibility for it, solve problems, including non-standard ones, to be the master of one's life. Each of the above qualities is called "competence." Before the school, the task is to formulate these competencies." (Samykina AV, 2009)

At the same time, the general education school is unable to form a level of competency of students, sufficient to solve problems effectively in all areas of activity and in all specific situations, especially in a rapidly changing society in which new areas of activity and new situations are emerging. The school's objective is the formation of key competencies. Key competencies are the ability of students to act independently in a situation of uncertainty when solving actual problems for them. (Lebedev OE, 2004)

The amount of newsituations, whereready-maderecipesdonotwork, constantly increase. The NIS strategy says that at this stage in the country's education system, the problem of applying knowledge is becoming ever more acute. The direction that provides for the participation of schoolchildren in scientific research and scientific practical activities is becoming increasingly important. The direction shapes the students' skills in the practical application of theoretical knowledge. The research skill, acquired at school, will help its graduates to be successful in all areas. To succeed in this, the after-school design and research activities of students are of great importance. In this regard, this article examines the experience of conducting extra-hour project activities of students in Nazarbayev Intellectual schools.

The purpose of research activities of students in Intellectual schools is to develop the cognitive skills of students, their critical thinking, and the ability to independently design their knowledge and navigate the information space. The main purpose of extracurricular project activity can be measured by; the realization of children's abilities and potential, development of communication skills (partner communication), the formation of skills in the organization of the workplace and the use of working time (self-management), the formation of skills of work with information technology (collection, systematization, storage, use), the formation of the ability to assess their capabilities, to recognize their interests and make informed choices.

The purpose of the presented research is to identify the problems of organization of extracurricular project activity of NIS students based on a complex analysis. For a

multifaceted consideration of the problem, the mixed method of investigation was chosen as the most effective one. In the study, both qualitative and quantitative methods were used. In order to study the teacher's interest in managing student design work, a questionnaire was conducted as one of the methods of quantitative analysis, in which 91 NIS CBS teachers from Petropavlovsk took part. To find out the organization of the design and research activities of students in other countries, eight foreign teachers were interviewed. Studying of the experience of project activities of students in other NIS of Kazakhstan was carried out through interviews with 13 teachers, the results of which demonstrated the qualitative aspect of research question.

In addition, to evaluate the effectiveness of the project activity, 30 project works of students were analyzed.

In general, interpreting the obtained results, it can be concluded that now NIS schools carry out extracurricular project work with students. However, this work needs a single methodological reinforcement, both in terms of organizing the management of the project's extra-hours project activities, and in terms of design work. Holding trainings and seminars to explain the content, objectives, competitive requirements for teachers and students will be very important.

#### *Literature review*

In pedagogical literature, the terms of "research activity", "project activity", "research method of teaching" and "project method" are often used as synonyms, although there is a significant difference between them. In this connection, it is necessary to clarify the content of the concepts "project" and "research", including in the context of their refraction in the educational space. In our opinion, the research and project activities correspond to extracurricular activities of students. While the "Project Method" and the "Research Method of Learning" are methods of cognitive activity, the instrument of cognition, the technology of teaching in the lesson.

The project is a prototype, a prototype of a supposed or possible object, a state, in some cases - a plan, design - the process of creating a project. There is a fundamental difference between research and design: research does not involve the creation of any pre-planned object, even its model or prototype. (Savenkov AI, 2010). Biology teacher Varygina TN determines the design of their own research as an activity that involves the allocation of tasks and objectives, the selection of principles for choosing techniques, planning the progress of the study, determining the expected results, assessing the feasibility of the study, and identifying the necessary resources. In her opinion, the research activity of students is connected with the decision of the students of a creative, research problem with a previously unknown solution (Varygina TN, 2010). In our opinion, the project activity may include research. E.S. Polat argues that it is important not to identify the content of the concepts "project as a result of activity" (its definite design) and "project as a method of cognitive activity". Research activities can be one of the areas of work within the project.

E.S. Polat focuses attention on the fact that this activity provides not just the achievement of a particular result, formalized in the form of a concrete practical exit, but the organization of the process of achieving this result. Speaking about the typology of projects, the author notes that research activity can be dominant in the project, and identifies this type of project as a "research project" (Polat ES, 2003). AV Leontovich notes, that the study and the expert procedure concluded within it, at the pre-project preparation stage and at various stages of the project implementation, it is possible to analyze possible scenarios for its development, the expected consequences and make the necessary adjustments. In the methodological plan, it is important to take into account that the project activity involves the development of a clear action plan, the formulation and recognition of the problem under study, the development of real hypotheses and their verification in accordance with a clear

plan. This process should be sufficiently detailed technologically developed (Leontovich AV, 2003).

At the same time, it should be said that the main feature of research in the educational process is that it is educational. This means that its main purpose is to develop the personality, and not to receive an objectively new result, as in science. In science, the main objective is the acquisition of new knowledge, while in education the aim of research is to help students acquire the functional skill of research as a universal way of mastering reality. In addition, it develops their research skills and critical thinking. Activating the student's personal position in the educational process is based on the collections of subjectively new knowledge (that is, self-sufficient knowledge, which is new and personally significant for a particular student) (Leontovich AV, 2003).

Thus, the design and research activity of students is a purposeful activity carried out for a specific purpose, according to a specific plan, aimed at solving research practical problems in any area of the content of education. In the practice of school competitions, priority is given to projects, while research can serve as an effective tool for developing the child's intellect and creativity in teaching and learning.

In its structure, design and research activity is a multi-stage system of interrelated stages. Work on any type of project involves four main stages:

1. Planning the work on the project:

- Expressing wishes and possible ways of resolving disputes;
- Discussion of emerging ideas;
- Transfer of topics of interest to students;
- Formulation of the project theme for a class or group of students.

2. The analytical stage (the stage of research work of students and the independent acquisition of new knowledge):

- Clarification of the intended goal of the tasks;
- Search and collection of information using specialized literature, mass media, the Internet, use of students' own knowledge and experience;
- Information exchange with other persons (students, teachers, parents, consultants);
- Interpretation of data;
- Comparison of the obtained data and selection of the most significant ones.

3. The stage of generalization (the stage of structuring the information received and integrating the acquired knowledge, skills, skills):

- Systematization of the received data;
- Construction of a general logical scheme of conclusions to confirm the results (in the form of referrals, conferences, video films, multimedia presentations, etc.).

4. Presentation of the results (the stage of analysis of research activities of schoolchildren):

- Comprehension of the received data and ways of achievement of result;
- Discussion and organization of the presentation of the results of work on the project (at the school, district, city, etc.) level.

Despite the fact that the problems of design and research activities of students in scientific literature are of great importance, the organizational system does not have sufficient efficiency. Therefore, we can agree that the place of scientific projects and scientific competitions in the school curriculum should be reviewed.

#### *Methods research*

In this article, mixed methods of research have been used to identify the problems of organizing extracurricular project activities of NIS students. A mixed method is a method of conducting research that involves the collection, analysis and integration of quantitative and qualitative research in one study or as part of a research program. The aim of this method of research is that both qualitative and quantitative studies in aggregate provide a better

understanding of the research problem than just one research approach (Johnson, R. B., & Onwuegbuzie, A. J., 2004).

Some authors of mixed methods consider this form of research as a methodology and focus on philosophical assumptions (Tashakkori&Teddlie, 1998). Undoubtedly, all research approaches have the underlying philosophical assumptions that guide the researcher. Philosophically, mixed studies use a pragmatic method and a system of philosophy. The logic of the study involves the use of induction (or discovery of patterns), deduction (testing of theories and hypotheses) and abduction (the disclosure and use of the best of the set of explanations to understand their results) (deWaal, 2001). Other authors of mixed methods emphasize methods of data collection and analysis (Creswell, Plano Clark, et al., 2003; Greene, Caraceli, & Graham, 1989; Onwuegbuzie&Teddlie, 2003). Following Creswell, these methods are a research project with philosophical assumptions, as well as quantitative and qualitative methods. This intermediate point, apparently, provides the widest possible definition, but with a clear focus. This method involves the collection and analysis of data, a mixture of qualitative and quantitative approaches at many stages of the research process. Quantitative data contains closed information, such as behavior or information processing tools. Collection of this kind of data can be done using a closed checklist on which the researcher verifies the vision of the behavior. Sometimes quantitative information is contained in documents, such as census records or attendance records. The analysis consists of statistical data collected using tools, checklists or public documents to answer research questions or test hypotheses. On the contrary, qualitative data consist of open information, which the researcher collects during the interview process. In addition, qualitative data can be collected through monitoring participants or research sites, collecting documents (for example, a diary) or a public (for example, meeting minutes) source or collection of audiovisual material, such as video recordings or artifacts.

For example, surveys, a traditional quantitative source of data, are used in ethnographic qualitative studies (LeCompte&Schensul, 1999). On the other hand, narrative stories related to qualitative research are used for quantitative analysis of the history of events (Elliot, 2005). These methods are used to compare the results of quantitative and qualitative studies. The reason for using mixed methods is that a quantitative or qualitative one can be insufficient in itself. A more valid argument in support of combined methods is that quantitative and qualitative methods give more evidence; mixed methods may be the preferred approach in the scientific community. The study of mixed methods is formally defined as a research class in which the researcher mixes or combines quantitative and qualitative research methods, approaches, concepts or language in one study. The study of mixed methods is also an attempt to legitimize the use of several approaches in the answer to research questions, and not to limit the choice of researchers. This is an expansive and creative form of research, and not a limiting form of research. The most fundamental is the research methods of research questions, which should contain research questions in such a way as to obtain the greatest probability of collecting useful information. Many research questions and combinations of questions are best and most fully resolved with the help of mixed research methods. In order to conduct research effectively, it is first necessary to consider all the relevant characteristics of quantitative and qualitative research. For example, the main characteristics of traditional quantitative research focus on the derivation, validation, theory / hypothesis testing, explanation, prediction, standardized data collection and statistical analysis. The main characteristics of traditional qualitative research are induction, discovery, research, theory / hypothesis generation, researcher as the main "tool" for data collection and qualitative analysis (Creswell, Plano Clark, et al., 2003).

In this study, qualitative data such as interviews, observations, and document analysis were used. A quantitative analysis was carried out, a statistical analysis to describe and

compare variables. Qualitative research was used to explain and generalize quantitative results.

### *Results*

In order to determine the state of extracurricular design and research activities in NIS; primary and secondary research was conducted.

The primary research includes a questionnaire for NIS teachers of CBS in Petropavlovsk, interviews of the leaders of the participants in the network project competition, a questionnaire of foreign teachers of NIS CBS in Petropavlovsk, monitoring of the work of the jury members in the competitions and analysis of 30 design works by participants competition of projects among NIS students.

91 teachers participated in the questionnaire of NIS CBS teachers in Petropavlovsk. The survey was conducted online using the resource google form. The questionnaire included 10 close-ended questions and 1 open-ended question.

In order to analyze the state of the project activity in the NIS, interviews were conducted with teachers who are involved in the management of NIS projects. 13 teachers from other NIS schools of Kazakhstan participated in the interview. Teachers were asked 11 questions to assess the understanding of the stages of research work, the balance of the structural part of design works and the ownership of project research methodology. For the analysis of the quality of design works among students in NIS schools, 30 scientific papers were taken.

To compare the systems of organization of project activities, students within the country and abroad, a survey was carried out of foreign teachers NIS CBS in Petropavlovsk, representatives of different countries.

The secondary research includes analysis of integrated educational programs in NIS subjects, regulations on holding Republican competitions of research works and students' creative projects, rules for organizing and conducting republican competitions of scientific projects on general subjects, instructive and methodological letter on organization of educational process in the Nazarbayev Intellectual Schools in the 2017-2018 school year.

### *Data analysis*

The execution of design works by Nazarbayev students of intellectual schools is stipulated both in the framework of educational programs and in extra-school activities of students, oriented towards participation in competitions. From the analysis of curricula, it follows that the projects are provided in the programs of the following disciplines: Global perspectives and project work, English, Computer science and Art. As can be seen from the table below, there are 32 projects in the main school and 12 projects in the senior school, with projects for 2 humanitarian subjects and 1 mathematical direction.

<b>Grade</b>	<b>Subject</b>	<b>Number of projects</b>
<b>7</b>	English, Arts, Informatics	11
<b>8</b>	English, Arts, Informatics	7
<b>9</b>	English, Arts, Informatics	7
<b>10</b>	English, Arts, Informatics	7
<b>11</b>	English, Informatics, GP(is performed during the year)	8
<b>12</b>	Informatics,(project continuation)	4
<b>Total</b>		<b>44</b>

As can be seen from the table above, starting from the 7th grade, students independently (with the support of the teacher) design their own projects in informatics. Because of the project, students create a software product, present it and describe each step of the project in the report. The projects are assessed at the end of the year. The teacher coordinates the process

of selecting the project participants by offering students topics, which are integrated with other learning subjects, providing opportunities for group work in order to conduct research and present information - including a research project. The students present results at conferences, seminars and other events of this kind; presentations are often held in groups.

The curriculum of such subjects as mathematics, physics, chemistry, biology and geography does not provide for project activities. However, project competitions conducted both in the NIS competitions and in the whole in the Republic are focused, first, on the topics defined by these disciplines. For example, the main directions of the annual Republican scientific competition of projects among pupils of schools conducted by the Republican Scientific and Practical Center "Daryn" and National Academy of Sciences of the Republic of Kazakhstan. There are physics, technology, Earth and space science, mathematics, applied mathematics, informatics, economics, biology, chemistry, environmental protection and human health, history, jurisprudence, literature and linguistics. It follows that all out lessons project activity of NIS students is focused on the requirements of the competition. Organization of extra-hour project research activities of students in NIS schools includes bringing to the attention of students and project managers about the timing and status of various competitions held in the country, conducting an in-school competition and financing the participation of students in contests, not only outside the city, but also outside the country. In each methodical association of teachers, the person responsible for working with students coordinates this work. Proceeding from the provisions of the scientific competition, the following works should be submitted: 1) illuminating facts, events, phenomena and individual, previously unknown parties in this field of science; 2) representing the designs of apparatuses, models and instruments that introduce new solutions to practical problems, which are involved in improving school experiments, rationalizing production processes; 3) computer models and projects with economic and legal justification aimed at solving social and economic problems. Scientific competitions are held in several stages. They are interschool, district, republican. Students who plan to engage in scientific work in one direction or another must first have a basic knowledge of the subject and, possibly, adjacent to it. According to the rules approved by the order of the Ministry of Education and Science of the Republic of Kazakhstan dated March 13, 2012 № 99, the competition is conducted in 4 stages. At the first stage, participants register their research projects at the Center. Then pupils of secondary schools participate in the regional (regional) competition, and students from Nazarbayev intellectual schools take part in the selection round of the contest. The third stage includes 2 rounds: testing on the profiling subject and preliminary examination of the project. The winners of this stage participate in the republican contest.

One of the main requirements of this competition is that the research should be systematic, long-term, suggesting some continuity in the study. Several students from different classes can work on one project. For example, in a team consisting of students of different classes, the study can be distributed among students in accordance with their level of development. The research work of schoolchildren is formalized in accordance with approved requirements; bench work of schoolchildren must also meet the requirements for the design of stands (the above-mentioned order of the Ministry of Education and Science of the Republic of Kazakhstan).

Following the results the winners and prize-winners are awarded with diplomas of the Ministry of Education and Science I, II, III degrees, have the pre-emptive right to hold a competition for receiving educational grants for training in higher educational institutions of the republic in accordance with the Law of the Republic of Kazakhstan "On Education" competitions. Participants in the network competition of scientific projects, «Zerde» receive not only certificates of participation, certificates for occupied places, but also valuable prizes, which increases the motivation of students to write project works.

Interview with NIS teachers who are involved in project management done for analyzing the state of the project activity at the Nazarbayev schools. 13 people from NIS of Kazakhstan participated in the interview. To assess the structure of research works, the methods used by teachers in writing the project work, the following questions were asked to the teachers-representatives of the schools of the NIS network:

- 1) What kind of teacher are you? Place of work.
- 2) Project management experience
- 3) Which competitions did you follow?
- 4) Are you satisfied with everything in the regulations: requirements, criteria?
- 5) What are the stages of the project work?
- 6) How do you specify references?
- 7) How do you deal with plagiarism?
- 8) List the methods that you use.
- 9) Do you plan to engage in projects with students?
- 10) Why are you managing projects?

To analyze the results of the interview, the key questions selected in the table were:

questions	answers
preliminary study the provisions of competitions	0
always write an explanatory note	13
highlight the key stages of the project work	13
know the modern requirements for the design of links	0
teach students how to avoid plagiarism	0
I plan to engage in project activities	13

As can be seen from the data presented in the table, all interviewees are familiar with the structure of design and research work, but they have difficulties with the processing and interpretation of the received data, the correct design of the links. Another serious problem is the development of the skills of self-writing the text of the explanatory memorandum by the students. A great number of respondents showed that they are not familiar with the requirements of the structure of projects, the provisions and they are more likely to turn to more experienced colleagues for help. At the same time, we will give an example of project managers who have repeatedly won prizes in the competition. A teacher from Ust-Kamenogorsk, who has extensive experience in the university and NIS is participating for the seventh year. During this time, her projects have won 21 gold medals and participated in international conferences. The aim of this teacher is to execute long-term projects, when the results of the next project are intermediate and are related to the topic or the development of subsequent studies. The teacher has a clear idea of the structure of the project work, knows the methods that she uses in her work, does not study the provisions of scientific competitions, because she believes that she knows everything from her own experience. However, when asked about the design of the links, the teacher answers, that does not know the different styles of writing, does not study modern sources, and does not adhere to world standards.

An interesting experience of organization of in-school selection of quality projects is the creation of an expert council in the NIS of Pavlodar, whose leader participated in the interview. It is not surprising that projects from the city of Pavlodar also take prizes in the Republican competitions. Studies of scientific works of students show that the teacher clearly knows the structure of projects, has a presentation on writing an explanatory note. The design of the links does the same as it did when writing the thesis and did not use modern computer programs to process the data.

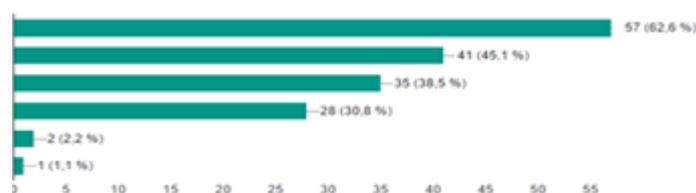
Observation of the work of the jury at the contest of the "Daryn" determined the criteria for evaluating students' projects. Because the works were presented at the competition, the results of which were obtained using complex devices, are patented as a personal invention, the "personal contribution of the participant" became an important criterion. The jury members questioned the degree of the student's participation in his own project, and sometimes even his ability to realize the stated problem. The next criteria for evaluating projects are the completeness of the disclosure of the topic, the selection of effective research methods, the correctness of measurements, compliance with the proportionality of the structure, the exact correspondence to the stated subject. The following criteria "novelty of scientific work", "practical significance" cause doubts, as the project of the schoolchild, first the educational project.

In addition, the jury pays much attention to the design of the work. According to the rules of the competition, the work should contain 20-25 pages of printed text and correspond to the structure of scientific research; however, works containing 3.5 pages were submitted for the competition, without taking into account the proportionality of the research work structure. According to the comments of the jury members it was obvious that the design work should be carried out for a long period of 1-2 years, the problem should be considered from all sides, the results of the presented research should be tested. Attention was also focused on the need to include a section of economic justification in some types of research.

An analysis of the state of affairs in the organization and conduct of extracurricular design and research work at NIS CBS in Petropavlovsk showed the following. The desire to create a good effective educational process for children is the main motivating factor for NIS CBSteachers in Petropavlovsk in the off-hour design and research activities. In addition, during the questioning, the following reasons were given: awareness of the lack of achieved results and the desire to improve them, a sense of their own willingness to participate in innovation processes.

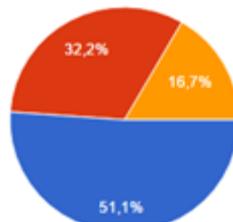


The overwhelming majority of respondents are sure that the project activity of students is the best tool for developing students' research skills.



However, it should be noted that despite the huge desire, many teachers are experiencing difficulties in the organization of design and research work. Causes hampering after-hour project activities of teachers were: a large educational load of the teacher and students, a lack of understanding of the system of building work with students, the lack of methodological recommendations for conducting work with students and the design of works, orientation to competitions. More than half of the respondents do not have a clear idea of how to organize the development of students' research skills. Some teachers are not guided in the

methods of research work. In addition, one of the demotivating factors affecting the entire system of organization and execution of research works is the lack of funding. Students have the opportunity to leave free and participate in such competitions as "Nauryzov Readings", "Zerde", a network competition of projects held in the territory of the Republic of Kazakhstan. At the same time, participation in international competitions is not provided.



To study the foreign experience of organizing after-hours project activity of students, a survey was carried out of foreign colleagues who are currently working in the NIS CBS in Petropavlovsk. Almost all respondents have a long-term experience in both schoolwork and project management of students to NIS. Analysis of the answers showed that in most countries this work is carried out in specialized scientific clubs run by students. When writing works, both teachers and students are guided by international and scientific research formats. The project report should have a title, confirmation, annotation, reference information, procedure and requirements, results and analysis of results, conclusion and references. Projects can be an innovation or improvement of one made earlier, if it is not plagiarism. In this case, each teacher can have his own approach. The main motivating factors for students are self-development and perfection of research skills.

#### *Conclusion*

Summing up the results of the conducted research, it should be noted that the formation of conscientious motives, research skills, subjectively new knowledge for students and methods of activity is a requirement for a graduate of the school, modern life. What becomes important is not what a person knows, but what he knows, and how he can apply knowledge. That is, not the quantity of knowledge, but functional literacy, becomes important. Design and research activity of students is self-sufficient activity of students, carried out for a specific purpose, on a specific plan, aimed at solving research and practical problems in any area of the content of education. With the help of a correctly constructed system of student design and research work, it is possible to increase the effectiveness of competence training. The study showed that despite the holding of the Republican competitions of scientific projects and the annual achievements of its participants, in the organization of extracurricular project activities of students, there are problems that impede the achievement of the main goal and the development of key competency skills. The project activities of students are often episodic non-systemic, focused not on the results of the project, but, more so, on the requirements of the competition. Conducted competitions are of the same type. To clarify the goals of the project activity, the system of the teacher-project manager's relations with the students, from the student's consolidation to the leader, the choice of the topic, the order and timing of the student's interaction with the manager, and finishing with the design of the work, all this should be accessible and understandable for each teacher. Most of the problems voiced by interviewers can be solved by the creation of unified methodological recommendations on the organization and design of research works. In addition, in our opinion, it is necessary to expand the list and geography of the competitions, in this regard, take into account in the recommendations the work experience and the requirements of foreign competitions for design work of schoolchildren.

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## ПРОБЛЕМЫ ЖИВОТНОВОДСТВА СЕВЕРНОГО РЕГИОНА И ПУТИ ИХ РЕШЕНИЯ

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На современном этапе развития животноводстве для повышения продуктивности животных и обеспечения населения мясом, молоком не только внутренние потребности страны, но и поставлять экологически чистую, высококачественную продукцию отрасли на экспорт необходимо в условиях республики повсеместно заниматься вопросами улучшения пород и крупномасштабной работы по качественному совершенствованию стада. Эти вопросы, конечно же, решаются на основе улучшения и усовершенствования условий содержания. Глава государства постоянно подчеркивает о необходимости интенсивного развития сельского хозяйства как одну из отраслей инновационной экономики, увеличении добавочной стоимости сельского хозяйства, его объемы в ВВП нашей страны и общем объеме экспорта. Одной из таких направлений является отрасль животноводства.

В настоящее время развитие животноводческой отрасли является одной из главных задач сельского хозяйства. Республика Казахстан обладает высоким потенциалом в сельскохозяйственной сфере, поскольку она имеет соответствующие природно-климатические условия и богатейшие пастбищные угодья, которые