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Problems of integration of classroom and extracurricular independent work of students

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Abstract

In the context of the total digitalization of the education system, free access to information, the development of distance and mixed forms of education, it is the integration of classroom and extracurricular work of students that allows creating conditions for the activation of creative activity of students, for stimulating their responsibility and hard work, as well as the intensification of informal interaction between students and teachers. In the innovative experience of higher education, there is a certain practice of integrating classroom and extracurricular independent work of students, which today requires deep analysis and systematization. The purpose of the study is to identify and systematize the main directions of integration of classroom and extracurricular work of students in modern higher education. Research methods that were applied are analysis and generalization of scientific and pedagogical literature on the problem, comparison, systematization. The results of the study. Depending on the degree of interrelation of the integrated structures, the following models of integration of classroom and extracurricular independent work of students are distinguished: traditional; the “flipped learning” model, which assumes the organization of traditional classroom and extracurricular independent work "on the contrary"; the project-research model, which assumes the implementation of a closed cycle of productive activities by students – from the idea, design to the implementation of the project and reflection. System integration is achieved through the use of an interconnected sequence of educational tasks: operational – as mini-projects of educational activity; tactical, corresponding to supra-situational activity – larger educational projects, where students can already set their own goals, actively apply their knowledge in various subjects in practice; strategic – tasks of the creative level, corresponding to the creative activity of the individual. Conclusions and recommendations. In the modern educational process, extracurricular independent work of students is increasingly acquiring the status of the main form of organizing learning process. Strengthening the role of independent work requires a new view on the integration of classroom and extracurricular independent work of students. Teachers should make greater use of the opportunities of educational-research projects and the "flipped classroom" technology as modern means and forms of convergence of classroom and extracurricular work of students. The results of the research can be used in the process of designing curricula, work programs of disciplines, individual forms of organizing independent classroom and extracurricular work of students.

Keywords: independent work, integration, classroom individual work, extracurricular work.

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Introduction

It is impossible to imagine the improvement of educational work in higher education without a large-scale development of the system of classroom and extracurricular activities. Classroom studies are classes conducted by teachers and students within the allotted time and a certain contingent of students (lecture, seminar, practical lesson, electives). Classroom studies provide clear planning and organization of educational work, as well as systematic monitoring of the process and results of students' activities. However, these classes have limited opportunities for a variable creative organization of teaching, educating and developing the student's personality, creating optimal conditions for independent activity of the teacher and the student. Successful implementation of these positions is possible in extracurricular activities. Extracurricular activities of students, which should be given due attention in the curriculum, become the first platform for the implementation of creative and organizational abilities of students. In the future, it should be transformed into scientific and project work, the activities of cultural associations, intellectual clubs, participation in competitions, social events, etc.

In this regard, the problem of integrating classroom and extracurricular independent work of students is updated. This is due not only to the above-mentioned conditions, but also to the general tendency to increase the role and place of independent work of students. In the context of the total digitalization of the education system, free access to information, the development of distance and mixed forms of learning, it is the integration of classroom and extracurricular work of students that allows creating conditions for the activation of creative activity of students, for stimulating their responsibility and hard work, as well as the intensification of informal interaction between students and teachers.

Purpose and objectives of the study

The purpose of the study is to identify and systematize the main directions of integration of classroom and extracurricular work of students in modern higher education.

Research objectives:

1) to reveal the content of the concepts “integration”, “independent work of students” and their place in the system of related concepts;

2) to identify the main directions of integration of classroom and extracurricular independent work of students, based on the study of innovative pedagogical experience of higher education.

Literature review

A lot of research has been devoted to the problem of the relationship between the integration of classroom and extracurricular work of students in modern higher education. In the works of Senashenko & Zhalnina (2006), Pak, Shilnikova, & Pak (2015) and Zmeeva (2015), the main signs of independent work of students as a form of training organization are revealed. Various innovative models of organizing independent work of students were the subject of attention by Ibragimov & Ibragimova (2019), Ibragimov (2018), Larionov & Lider (2014), Starostina (2016) and other researchers. Attention is paid directly to the integration of classroom and extracurricular independent work of students in the works of Grigorieva (2014), Kazarenkov, Vetokhin, & Kazarenkova (2018) and others. In foreign literature, researchers Bergmann & Sams (2012), Graney (2013), Marshall (2013) and Muldrow (2013) reveal the goals, content and methods of organizing an "inverted class" as a form of integration of classroom and extracurricular work of students.

Despite the rather large attention to the problem under study, the issues of studying and generalizing both theoretical works and innovative pedagogical experience of the domestic higher school in the field of integrating classroom and extracurricular independent work of students remain relevant.

Methodology

We studied innovative pedagogical experience of higher education, analysis and generalization of scientific and pedagogical literature on the problem, comparison, systematization. The selection of literature was carried out according to the criteria "compliance with the research topic", "rating of the scientific publication in which the article was published". With this in mind, publications in recent years (2000 – 2020) in the highly rated journals "Higher Education in Russia", "Alma Mater", "Kazan Pedagogical Journal", etc. were analyzed.

Results

Solving the first task of the study, it was found that despite the presence of certain differences in approaches to the interpretation of the concept "integration", the authors share the idea that integration is a process of deep interaction of various phenomena and processes in education, leading to the appearance of new properties in each of the interacting parties that could not appear outside of integration. Similar in meaning concepts that are operated in pedagogy are cross-curriculum, interdisciplinarity, transdisciplinarity, synergy.

In recent years, the concept of “convergent educational environment” has become fixed in pedagogy, the construction of which “is currently the central task of pedagogical science and practice” (Kondakov & Sergeev, 2020, p. 14). There is a set of requirements for a convergent educational environment, including requirements for the structure, properties, tools and means, and results.

For example, from the point of view of structure, the convergent educational environment is “a complex integrative system, concrete in the interrelationships and interaction of real and virtual objects and phenomena” (Kondakov & Sergeev, 2020, p. 14). These phenomena and objects include: convergent results of education; convergent content of education (horizontally – between different educational areas; vertically – between different levels of education); convergent model of organizing a continuous educational process throughout a person's life; convergent technological solutions (artificial intelligence as the third subject of the educational process, acting as an assistant to the teacher and the student in learning, self-development and self-determination).

It is important to pay attention to the fact that a convergent educational environment should have such properties as multi-vector, diversity and variability; the process of learning within the educational process should play a central role; motivate learning, various activities, innovations, interaction and cooperation, self-organization, self-actualization and self-reflection, self-education (Kondakov & Sergeev, 2020). We will highlight here the part that concerns the learning process: it should play a central role in the educational process. From all of the above stated, we can conclude that attention to independent cognitive activity and independent work as a form of its organization is becoming one of the leading directions of the development of the educational process in the context of its digitalization. In this context, the integration of classroom and extracurricular independent work of students in a convergent educational environment is an incredibly urgent problem of modern education. The integration of classroom and extracurricular work of students allows to put the students and their personality at the center of the educational process. This involves relying on the development of the personality in the educational process, on the interests of students as equal members of society, including taking into account their prospects in the market of professional services.

Let us now reveal the concept of "independent work of a student". Independent work of students is understood as "planned educational and scientific work performed on the instructions of teachers under their methodological and scientific guidance" (Senashenko & Zhalnina, 2006, p. 103); "work on a certain list of topics allocated for self-study, provided with educational and methodological literature and recommendations, controlled in the form of tests, control works, colloquiums, abstracts, essays and reports" (Senashenko & Zhalnina, 2006, p. 138); "a means of developing independence and turns out to be a reproductive educational and cognitive activity of students, involving algorithmic activity within a given or initially found method of action, aimed at the formation and consolidation of basic knowledge, skills and abilities" (Zmeeva, 2015, p. 154).

The definition given in the Russian Pedagogical Encyclopedia is the most correct from the point of view of identifying key features: "independent work is an individual or collective educational activity carried out without the direct guidance of teachers, but according to their tasks and under their control" (Novikov, 2013, p. 193).

The main purpose of independent work at university is to transform the student into an active subject of educational activity, functionally and psychologically ready, taking into account their own interests, needs and abilities, to design an individual educational trajectory, to choose, analyze and personally assign the necessary information from various sources, to carry out a search of a creative research, etc.

As a form of organization of educational activities, independent work is characterized by external (students' planning of their activities, performing tasks without the direct participation of the teacher, systematic self-control over the progress and result of the work performed, its correction and improvement) and internal (needs, interests and motives that encourage students to perform tasks and achieve the goals set (by the teacher or the students themselves), volitional efforts, emotional coloring of the process and results of students' actions) signs (Orlov, 1998).

Both groups of signs of independent work are equally important. Ignoring these or other signs affects the quality of its implementation. For example, if the teachers do not pay due attention to the organizational aspects of independent work (this may be expressed in the fact that the do not acquaint students with the methods of planning independent work, the composition of educational actions necessary for completing the task and self-monitoring its progress and results;

do not correlate the volume and complexity of the task with the capabilities of students, the pace and time of its completion, etc.), this leads to the creation of a situation characterized by excessive anxiety of students, their concern for the results and evaluation of their work. And this, in turn, affects the quality of the educational task, incomplete achievement of the goals of independent work, despite the fact that the tasks themselves could be interesting and valuable for students.

Similarly, regarding the consideration of internal characteristics: if the independent work is well organized, but the tasks offered by the teacher do not affect the needs and motivational sphere of students, then it is very likely that students either do not complete the tasks, or do it formally (for example, download an abstract from the Internet).

According to the place and time of the event, there is a distinction between classroom and extracurricular independent work of students. Classroom independent work is performed in training sessions (lectures, seminars, practical and laboratory work) under the direct supervision and control of teachers and on their assignment; they are designed either for part of the lesson or for the entire time of the lesson (for example, independent control work). Extracurricular independent work is carried out by the student on the instructions of the teacher, but without teacher's direct participation: preparation for lectures and seminars, selection and study of scientific and methodological literature with the involvement of electronic media; preparation and writing of reports, abstracts; preparation of reviews; micro-research; development of visual materials, multimedia presentations on a given topic; writing term papers and theses and projects; various types of practice, etc.

The results of solving the second task of the study are to identify the main directions of integration of classroom and extracurricular independent work of students, based on the study of innovative pedagogical experience of higher education. First, we note that under the innovative experience of higher education, we understand educational practice that meets the current needs of the individual, society, and the state, which at the same time provides higher educational results in comparison with mass practice. To identify innovative educational practices, we have studied scientific and pedagogical literature and highly rated scientific and pedagogical journals (Vysshee obrazovanie v Rossii, Pedagogika, Vestnik Vysshey Shkoly, etc.) over the past ten years (2011-2021). Here is a brief description of innovative approaches to the integration of classroom and extracurricular independent work of students.

The project-research model of integration of classroom and extracurricular work of students contributes to the formation of students' readiness for self-management by independent work (Grigorieva, 2014; Kazarenkov, Vetokhin, & Kazarenkova, 2018).

Successful experience in implementing this model has been accumulated at the Institute of Psychology and Education, as well as at the Faculty of Law of Kazan Federal University. This model assumes that in the course of independent work, the student always creates a final product that has theoretical and (or) practical significance. Tasks for independent work are usually offered by the teacher, but at the same time, students can choose from the proposed list, or formulate their own version of the task (for example, when choosing topics for a course or diploma project). Knowledge, skills and abilities are not a self-aim, but a means of solving a specific problem. Students independently set a goal, formulate tasks that are necessary to achieve the goal, plan and manage their own time allocated for the project, work with information sources, look for their own creative approaches to completing tasks, etc. (Ibragimov, 2018; Larionov & Lider, 2014).

In the experience of Tomsk Polytechnic University, the model of integration of classroom and extracurricular independent work of students according to the scheme of project-oriented learning of the implementation type in the conditions of joint activity is implemented. It highlights the following elements of the model: problem formulation; clear goal setting; action planning; identification of alternative directions of action; forecasting and assessing the impact of decisions made on the environment; choice of alternative solutions and their variability; taking into account the non-linearity of education, science, technology and the market.

The main idea is to transfer the process of solving physical problems and performing laboratory work in the physics course into the project activities of students, with further transfer of the educational project into the implementation one. This fully corresponds to the activity paradigm of the Federal State Educational Standard of Higher Education, when the results of teaching physics are competencies with elements of a vision of the future. The result of this integration model is an increase in the effectiveness of managing the effectiveness of students' independent project activities. A combination of seminars and laboratory work occurs.

This method of organizing independent work allows not only to deepen students' knowledge of basic courses, but also to lay the foundation for the development of educational and innovative creativity of students. For this purpose, methodological guidelines have been developed that contain a system of tasks, on the basis of which the project activity of students is as close as possible to practical (Larionov & Lider, 2014).

Samara State Aerospace University has introduced the wiki project method for the course “Problems of Modern Linguoaxiology” (Starostina, 2016). Wiki is a hypertext environment, a system for information collaboration.

This environment allows a group of students to jointly create and edit their own information blog online. In other words, it is a site that is divided into sections, and each section can be edited by an authorized user (for example, Wikipedia).

The project is created by a group of students, when independent work is combined with individual work, work in mini-groups and work of the whole group of students. The technology of implementing this approach to the integration of classroom and extracurricular independent work of students includes four stages. At the first stage, students are assigned the overall theme of the project, groups of 5-6 people are formed. Then each group chooses a section of the project (you can offer your own version). And within the mini-group, there is an even more individual distribution of topics (for example: the topic of the project is the English language discourse; sections of the project – song discourse, business discourse, film discourse; division within a mini-group – comedy, drama, horror). At the second stage, each student finds 10 examples of communication on the topic and analyzes them. The analysis algorithm is provided in lecture classes, and as the course progresses, new analysis methods are added to the student's knowledge. At the third stage, students firstly present their part on the Wiki, and then the whole group presents some generalized material on the Wiki. At the fourth stage, the presentation takes place.

This form of learning organization allows students to qualitatively and firmly assimilate the educational material, for acquaintance with which a relatively small number of classroom studies were planned. The practical part of the course is entirely in the format of independent work. Students carry out the project with great interest (at the level of individual work and at the level of a group), which has a positive effect on the achievement of educational goals.

In the course of working on the project, students not only gain the basic knowledge and skills of the course, but also acquire the ability to work in a team, analytical skills in processing large amounts of new information. This model differs from many similar models in which students can always get acquainted with the success of their fellow students, which adds an element of rivalry and competition to this model. Wiki also allows commenting, and it creates mutual control. This model allows attracting all students to the work with the division of responsibilities.

The freedom to choose a topic or the opportunity to offer your own topic at the first stage contributes to a motivated engagement and interest as a result. Also in this model, there is individualization, since students do work to the best of their abilities, and there is no external irritator that would hurry students, preventing them from obtaining and acquiring knowledge at their own pace.

A number of works present the practice of using the technique “flipped classroom” as a form of integration of classroom and extracurricular independent work of students. For the first time, this model was proposed by the American chemistry teachers Bergmann & Sams (2012). In 2008, in Colorado, they began recording videos of their classes for high school students and posting them online. This idea was developed in the works of Graney (2013), Marshall (2013), Muldrow (2013), and others. Later, their experience has spread in various fields of knowledge around the world.

Russian teachers also use the "flipped classroom" model in their practice. Thus, Chilingaryan (2010) shot a large collection of video materials on a foreign language in the field of jurisprudence. Tikhonova (2018) notes the presence of different options for the implementation of flipped learning: the classical model, the “advanced model”, and the combined model.

The classical model of flipped learning involves preliminary acquaintance of the student with the theoretical material of the upcoming lesson. Materials for preparation can be given both in the form of a reference lecture summary or a textbook paragraph, and in the form of slides, video and audio documents. In the classroom, the teacher organizes a discussion of the studied material, explains difficult points, answers questions, and uses interactive teaching methods.

The advanced model also includes two stages – extracurricular and classroom, and involves the gradual complication of the tasks levels and the expansion of activities. During the preliminary training, students independently search for information on a given topic, read articles, in mini-groups or individually prepare theses that they will present in the classroom, questions for debates or round tables. They post the results of their work on a joint electronic platform, so that the teacher and other students have the opportunity to get acquainted with them in advance and better prepare for the lesson. Thus, the independent work of each student is monitored. In the classroom, the prepared theses are presented, the material read is discussed, and the reasoned analysis of the work of each group is carried out.

The combined model of the flipped class assumes, as its title implies, the combination of the first two models. The essence of this model is not to change the place of performance of a certain type of activity, but to rearrange the key components of the educational process. The traditional sequence of competencies involved (memorization, understanding, application, analysis, synthesis, evaluation) is changing. First, the practical application of the theory or model is studied and only then its theoretical justification is learnt. At the remote stage, students in mini-groups work with a task or problem situation, try to evaluate it, search for and analyze the information necessary for an objective assessment of events, and offer solutions.

In the classroom, they present the information and sources found, analyze the problem under the guidance of the teacher, and compare the advantages and disadvantages of each of the proposed solutions. This is followed again by a remote stage, during which students study the theoretical foundations of the question, the experience of working on this problem. At the final stage, in the classroom the entire studied material on the topic is summarized and revised; the applicability of this model or theory to other situations is analyzed (Tikhonova, 2018).

Thus, according to the criterion of “degree of integration”, three main models of integration of classroom and extracurricular independent work of students can be distinguished: the traditional, project-research model and “flipped learning”.

The traditional model of integration of forms of independent work of students currently continues to be one of the most common in the practice of higher education. The relationship between classroom and extracurricular independent work exists, but it is limited by the purpose (assimilation and consolidation of knowledge, formation of skills to apply knowledge to solve subject problems, nurturing of readiness for independent (usually reproductive) and educational activities (detailed description of the process of completing the task presented by the teacher, extensive increase in the volume of educational and methodological support for independent work (educational and methodological complexes, methodological manuals, examples of solving typical tasks, a set of test tasks, simulators, task books, etc.). The main types of independent educational activities of students in this model are reading, taking notes on educational literature, listening to lectures, audio and video recordings, memorizing, retelling, remembering, working with Internet resources, repeating educational material, etc.

The main disadvantage of this model is that students do not participate in the planning of the process of their independent work – tasks, algorithms, etc. are usually set only by the teacher. In addition, the student has no idea about the criteria and mechanisms for monitoring and evaluating the progress and results of independent work. Such a situation with the planning of independent work does not stimulate or encourage students to active cognitive performance, as a result of which it is episodic and spontaneous.

The "flipped learning" model is characterized by the purposeful integration of classroom and extracurricular independent work of students. It is aimed at organizing independent extracurricular work of students, designed to integrate modern information and communication technologies into the educational process in order to increase the motivation of students, more effectively form the skills of independent cognitive activity. The student's independent work is more active and independent, and the teacher's guidance is indirect.

The limitations are due to the fact that this model requires a lot of work for the preliminary preparation of video materials and other means. In addition, it is not at all obvious that students will actively work in extracurricular time with the proposed video materials, because the effect of novelty of various types of videos is no longer so relevant for modern students.

The project-research model is characterized by a high level of integration of classroom and extracurricular independent work of students. It assumes that students perform a complete, closed cycle of productive activities - from the idea to the implementation of the project and reflection. To this goal – to form a readiness to perform a cycle of productive practical activity – leads the solution of a set of tasks, first with the help of a teacher, and then completely independently. System integration in this model is achieved by building an interconnected sequence of educational tasks: operational – as mini-projects of educational activities corresponding to situational activity; tactical, corresponding to supra-situational activity – larger educational projects, where students can already set their own goals, actively apply their knowledge in various subjects in practice, communicate with each other, etc.; strategic – tasks of the creative level, corresponding to the creative activity of the individual. Such projects can be implemented in practical learning and educational projecting by organizing students' own experience in implementing integrative professional activities.

Discussion

A distinctive characteristic of our results, in contrast to previous works, is an attempt to consider the classroom and extracurricular independent work of students as an integrative unity implemented through various learning models – traditional learning, "inverted learning", "project-research training". It is shown that at the present stage of development, the design and research model of training creates the most favourable conditions for the integration of classroom and extracurricular work of students.

Conclusion

In the modern educational process, extracurricular independent work of students is increasingly acquiring the status of the main form of organizing learning process. Strengthening the role of independent work requires a new look at the integration of classroom and extracurricular independent work of students. Teachers should make greater use of the opportunities of educational-research projects, the technique of “flipped classroom”, mixed learning as modern means and forms of convergence of classroom and extracurricular work of students. The results of the research can be used in the process of development of curricula, work programs of disciplines, individual forms of organizing independent classroom and extracurricular work of students.

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