

# Innovative Approaches in the Educational Process Management of the University with the Use of Information and Educational Environment

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## Abstract

The modern organization of higher education has many areas of activity: the educational process, scientific research, the implementation of innovative projects and the commercialization of scientific and innovative developments, marketing activities, and is a complex structure for managing. One of the main tasks in the education system is the integration and exploitation of innovative approaches in the management of an educational organization in order to improve the quality of education. Changing the University management system in modern economic and social conditions is impossible without implementing a comprehensive Informatization of all University management processes and, in particular, building a unified information and educational environment (IEE). By the information and educational environment of the University, we understand a complex of hardware, software, organizational and methodological support, information resources, tools for developing, storing and searching information, implementing information support and organizational support of the educational process. In our study, we consider one of the innovative approaches to managing the organization of higher education – the process approach, which creates real opportunities for optimizing and adapting management processes in the University to the requirements of all stakeholders (administration, students, faculty, employees). The study was performed on the basis of the Belgorod national research University (BelsU) with the aim of improving the system of management of educational process of the University, determining of efficiency of functioning of information systems in educational subsystem BSU, determining the relationships of staff and teachers to use modern information and communication technologies (ICT), as well as areas of improvement in the management of the educational process using ICT.

## Keywords <sup>1</sup>

Information and educational environment of the University, educational process management, process approach, information system.

## 1. Introduction

The development of modern information technologies makes significant changes in all spheres of modern society including higher education. The main measures of informatization in educational organizations are: building an effective internal infrastructure, which is based on a single information and educational space of the University, unification of mechanisms for working with data and documentation, optimization of information flow management [1, 2, 3]. It is impossible to ensure the correct organization of the educational process and management of other processes in the University without a set of systems, processes and services, which are the information and educational

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environment of the University. Only within the framework of the functioning of the information and educational environment is it possible to provide full information support for all processes implemented in the University.

Innovations related to the digital transformation of the educational process are implemented in leading foreign and Russian educational institutions. Changes are not only in technical transformations, but also in academic, educational, managerial and structural innovations [4, 5, 6]. Many world universities use information systems to ensure improvement of internal management processes, as well as to improve or replace traditional services with digital ones [7, 8, 9].

Currently, universities in Russia have already created and continue to create integrated automated information systems (IAIS), which allows to build an information and educational environment (IEE), provide information support for the management of all types of educational organization activities (enrollment, educational process and graduation, research, staffing, logistics and financial support). Today, the IEE of the University becomes not only an environment for providing the educational process with the necessary information, but also a fundamental component of the entire management and administration system.

Innovative approaches to University management are: 1) system; 2) process; 3) situational. The founder of the system approach Ludwig von Bertalanffy considered the main task of management from the standpoint of the system approach to ensure a comprehensive process of achieving the goals of the organization. The process approach, according to E. G. Oikhman and E. V. Popov, involves the definition and description of all the main and auxiliary business processes (BP) implemented in the organization, the establishment of relationships between them and their subsequent management, including continuous improvement [10]. The situational approach allows better understand which techniques will contribute more to achieving the organization's goals in a particular situation. In the research of English scientists T. Burns and G. Stalker, this approach was considered from the point of view of situational thinking about organizational problems and ways to solve them. When constructing the information and educational environment at the National Research University "BelSU", we concluded that the innovative direction of improving the management system of a higher educational institution is the use of a process approach. This approach involves the definition and description of all main and auxiliary business processes implemented in the university, the establishment of relationships between them and their subsequent management, including continuous improvement.

This allows us to present the University as a single system, integrating the entire volume of organizational knowledge for management purposes; determine the needs for creating new processes based on the capabilities of information technologies, set the target orientation of the entire set of processes, thereby enhancing the consumer value of educational services and competitive advantages. The information and educational environment of BelSU, built on the basis of a process approach, consists of interconnected information systems that implement information support for various aspects of management activities (processes) and contributes to the transition from local management subsystems to integrated information and analytical systems that ensure the completeness, correctness, consistency and relevance of information, close interaction of employees and functional integration by eliminating duplicated work in various processes. All business processes (BP) in the educational sphere of BelSU are divided into three areas: implementation of the educational process (support and support of the implementation of educational programs); management of the educational process; analysis and improvement of the quality of the educational process – used information systems (is).

## **2. Problem statement**

The purpose of our research is to analyze the university management system using the process approach, to determine the efficiency of information systems functioning in the educational subsystem of the BelSU, to determine the attitude of employees and teachers to the use of modern ICT, as well as directions for improving the management of the educational process through the use of ICT.

### 3. Development of methodology

The analysis of the practice of using information systems in the management of the educational process at the Belgorod State National Research University and the results of the sociological survey "Study of the problems of using information and communication technologies in the management of the educational process of the university (on the example of BelSU)" allowed us to conduct a full-fledged study in the following areas of activity:

- implementation of the educational process, including with the use of electronic and distance learning technologies (e-learning system "Pegasus", computer final testing system, support system for the score-rating system of knowledge control, electronic class schedule, organized the creation and placement of electronic training courses, etc.);
- management of the educational process (management of educational programs, recording and monitoring of progress, management of the classroom fund, distribution of teaching load, etc.);
- analysis of primary information on the implementation of processes in the educational system of the university, providing support for the adoption of managerial decisions aimed at improving the quality of education (information and analytical system for monitoring the implementation of basic educational programs, rating system for teaching staff).

In the course of the study, we determined the attitude of the staff and teachers of the BelSU to the use of a unified information and educational environment to improve the educational process management system.

### 4. Discussion

The information and educational space of the University is a set of systems, processes and services, without which it is impossible to ensure the correct organization of the educational process and management of all processes of the University [11]. I. K. Andronchev believes that the effectiveness of management processes depends on the choice of means to obtain optimal results and meet the needs of users of educational services, and innovative parameters of post-industrial society impose new requirements to management tools [12]. Studies by both Russian and foreign authors have been devoted to the implementation of professional training systems based on process management tools in higher, corporate, and additional education (for example, such as customer voice (VOC) and deployment of quality functions (QF), support for those responsible for educational planning, etc.) [13,14]. Most experts believe that the Informatization of higher education should be comprehensive and provide a solution to an expanded range of tasks compared to the Informatization of a commercial organization: from University management procedures and decision support to tracking student progress and preparing educational materials. In this case, a truly visible result of Informatization is achieved, rather than a simplification of individual operations. At the same time, the success of the introduction of modern information technologies in the management of subsystems of the University directly affects the effectiveness of the entire educational organization [15,16,17].

Analysis of normative documentation [18,19,20] allowed us to identify the following areas of Informatization of the educational environment of the University:

1. Management of planning and organization of the educational process (automation of educational process management functions using software and hardware complexes).
2. Optimization of information, coordination and management functions – the creation of a regulatory and administrative environment by means of information and communication network the Internet on open official web resources of the University (official site of the educational organization, official sites of structural divisions about the management of the educational process of the University (for example, teaching management)).
3. Methodological support of educational programs: provision of study materials (development of electronic educational resources and the organization of access to them); the creation of an automated, integrated database of information and teaching resources educational programs (work programs, educational-methodical documentation, tasks for independent work, evaluation funds); ensuring the availability of training and methodological foundation for students.

4. Development of e-learning tools: development of online educational courses based on the active use of information and communication technologies (organization of interaction between teachers and students); use of e-learning tools and software environments in the system of distance education.

5. Organization of network training: use of network computer testing technologies; creation of a database (collections) of electronic learning tools (video lectures, electronic textbooks).

In accordance with the above, informatization in higher education should be implemented as a set of measures of an information and technological nature aimed at improving its activities as a system. It is impossible to make changes solely in the organizational structure without assuming that they will affect the educational process, without predicting the results of this impact. Thus, a transition from the traditional (functional) model of University management for innovation (process) in which the primary goal, as in our case, is to efficiently manage the educational activities with the definition of means of implementation, selection of units designed to perform the required tasks optimally and allocate the necessary resources.

According to scientists, the essence of the process approach is that any activity of an organization is represented as an interconnected sequence of steps, which determines the order of interaction and the appropriate organizational procedures, the necessary information, material and labor resources [21]. According to A.V. Glushchenko and E. M. Egorov, the process approach focuses the university management system both on managing a single process and all processes as a whole, and the quality system of the University – on ensuring the quality of process execution technologies. The process management model ensures the competitiveness of the educational organization, it is more effective, as it allows to solve a full range of tasks of an operational and strategic nature. The process model is characterized by high flexibility and the ability to respond to changes in the external environment [12]. To solve the problem of improving the efficiency of educational process management, it is necessary to combine separate information systems to support "management" processes into a single information and analytical space, providing uniform principles of operation of all subsystems in a single information field [22].

The process approach is an optimal combination of management principles (goal setting, adaptability, continuity, conditionality, interconnection, consistency, innovation) that allow us to consider the complex of implementation of information and technological support of educational programs in the form of a closed management cycle, the stages of which are filled with innovative content in accordance with the new characteristics of the quality of training [23]. The main requirements for building a management system of the educational subsystem of the University using modern information and communication technologies include: building a unified information space of the University; centralization of information resources management; creation of an integrated information and data storage; development of specialized applications in structural divisions; use of unified customizable interfaces for accessing information resources; openness and flexibility of the system.

BelSU actively uses information and communication technologies to organize and support the educational process. Based on the fact that all the business processes (BP) in the field of education BSU are carried out in three areas: the implementation of the educational process (support the implementation of educational programs); management of educational process; analysis and improvement of quality of educational process, used by information systems (is) can be divided into 3 groups:

1. Information system support and maintenance of educational process, aimed at information support of BP and directly related to the implementation of the educational process (electronic schedule, creating and publishing e-learning courses, organization and e-learning, e-testing, the provision of electronic services to students, etc.).

2. Information systems for managing the educational process, including information services, are aimed at providing information and automating: managing educational programs; admissions; recording and monitoring progress; managing the classroom fund; distributing the educational load; preparing educational documents, etc.

3. Information and analytical systems include information services that allow, based on the analysis of primary information about the implementation of business processes in the educational system of the University, to support management decisions aimed at improving the quality of education.

The first group of information systems aimed at organizing and supporting the educational process, including the use of e-learning and distance learning technologies, includes: the e-learning system (sea), is for conducting final computer testing; the "Electronic schedule" system; and Information systems for supporting the point-rating system for knowledge control. All these information systems operate within the framework of the Pegasus Internet portal.

Sea, built on the basis of the Moodle educational content management system, is designed to organize training using e-learning and distance learning technologies. Thanks to the capabilities of the system, students can learn by accessing the necessary electronic educational resources, and teachers can effectively organize training. Online training courses of the Pegasus system contain various training materials: theoretical material presented in various formats (text, illustration, web page, audio or video file, etc.), interactive tasks, and elements that provide discussion in online and offline mode. By varying the combination of course elements (chat, forum, Glossary, workbook, test, task, etc.), the teacher can organize the study of the material in such a way that the forms of training correspond to the goals and objectives of specific classes. Pegasus provides remote communication between teachers, students, and administrators via a built-in text messaging tool, forums, and chats.

In LMS "Pegas" of BelSU uses a set of software tools developed by employees of BelSU to automate the creation and content of training courses. With this package at hand, it is enough for the authors of training courses to issue training materials in a standard text editor in accordance with the requirements, and the program will do the rest of the work on creating training course resources for them. Many years of experience in using the software package at the Belgorod state national research University has shown that its use significantly saves time in creating training courses for sea "Pegasus". The teaching staff of the University has developed more than 6000 electronic educational and methodological complexes, which are available to students, students of additional education programs.

The information system for conducting final computer testing is used as an integral part of the interim certification. Testing is carried out in LMS "Pegas". The developed network system of educational testing is aimed at automating the process of comprehensive verification of students knowledge in subjects, analyzing test results and making recommendations to students for additional study of the subject. To implement the final computer testing, teachers develop test task funds in accordance with the approved Regulations on the assessment funds Fund. Developed test task funds after passing the Cathedral examination are placed in the LMS "Pegas". The tests approved by the Department become available in the mode of preparation for intermediate certification. The system also allows for testing to determine the remaining knowledge of students in subjects, entrance testing of first-year students to determine the real level of knowledge in basic school subjects. The analytical subsystem of the computer testing system allows to analyze the results of computer testing, aggregate them and provide the necessary information for making managerial decisions in the quality management system of the educational process.

The information system of support for the point-rating system of knowledge control is an element of the University system of quality management of education, as well as a tool for managing the educational process. The point-rating system of knowledge control provides students with motivation for systematic academic work during the semester and distributes students in the ranking based on the results of accumulated evaluation of their personal achievements in academic activities. The point-rating system is based on the calculation of points received by the student during the boundary control of progress (carried out periodically), the answer to the exam, etc.

The second group of educational process management systems includes the created portal "InfoBelGU: Educational process", which includes separate modules (information systems) aimed at automating individual business processes in the educational sphere.

The information system "Curricula" is designed to form an ordered electronic database of disciplines of curricula of implemented educational programs. The information contained in the information system "Curricula" is used for: automation of the processes of forming the load on departments and staff schedules; formation of electronic schedules of educational groups; quality control of the educational process; preparation of documents on education, etc. The system allows importing the curriculum prepared in the program complex "GosInsp". Information about the subjects studied in the curriculum is used in other information systems (electronic schedules, electronic statements, portfolios, etc.). To work with the disciplines of the work plan, the following information

is provided: a list of academic disciplines and practices; the volume of classroom or independent classes; types of training sessions; forms of semester control of program development; schedule of academic work, etc. All detailed information (data block) is divided into semesters, practices, special types of work, schedules of the educational process and disciplines, and it is presented on the tabs of the same name. Working with disciplines involves checking and editing discipline information, as well as editing a subgroup of disciplines, editing streams and editing synonyms of disciplines, enabling/disabling disciplines of choice. For each discipline, you can create subgroups, for example, for learning a foreign language, and define the composition of the subgroups. For convenience, there is a mechanism for copying subgroups to other disciplines. You can also create streams from different academic groups to study each type of class (lecture, practice, or test).

The information system "Information about Students" allows to create test and examination statements; accumulate information about the results of intermediate certification in the context of individual students, study groups and structural divisions; form an electronic student record book, enter information about attendance, search for a student.

The information system "Load" allows to automate the processes of distributing the academic load within the framework of educational programs and the formation of the University's staff schedule. Information about the subjects and the number of hours for various types of training sessions is automatically taken from the tables in the "Training plans" database. The system provides functionality for setting load standards for various categories of teachers.

The information system "Classroom Fund" is designed to automate the accounting of University classrooms used for the organization of the educational process, depending on their purpose, geographical location and assignment to the structural educational division.

The third group of information systems includes the information and analytical system for monitoring the implementation of basic educational programs, and the information and analytical system for rating research and teaching staff. The information and analytical system for monitoring the implementation of basic educational programs allows to automate the analysis of the effectiveness of the implementation of the educational process in the framework of individual educational programs. Improving the efficiency of the educational process is one of the urgent tasks of modernizing the system of higher education. The economic efficiency of the educational process, in fact, is understood as the productivity of teachers, i.e. the performance of a teacher more work than set for a certain period of time.

The use of analytical information system of monitoring of realization of basic educational programs allows to solve a number of problems, namely:

- automation of the accounting workload (staff and hourly) teachers in terms of departments and report generation at the rates as in the context of the University and in the context of individual educational structural subdivisions;
- automatic generation of analytical data on the academic load in the context of positions (assistants, senior teachers, associate professors, professors);
- formation of reporting information about the educational load in the context of types of load (lectures, laboratory and practical work, consultations, etc.);
- accounting for the training load matrix by type of training load and position;
- automation of accounting for the effectiveness of educational programs (financial costs, teacher-student ratio) in the context of structural divisions, forms of training, academic year, etc.;
- improving the effectiveness of management decisions related to implementation.

The information and analytical rating system of NPR is used for information support, automation and ordering of processes related to the organization of monitoring the results of scientific and educational activities of research and teaching staff and departments of the University.

The problem of assessing the quality of professional activity of an individual teacher and the teaching staff as a whole has always been one of the most pressing and at the same time difficult problems concerning the relationship not only within the professional and pedagogical community itself, but also the interaction of educational systems with society. As a social institution, the education system is always at the center of attention of society, which wants to know how effectively the latter implements its prescribed social functions. Rating as a system for evaluating formal

indicators has undeniable advantages – clarity of criteria, ease of implementation and the inability to arbitrarily overestimate or underestimate the rating, depending on whose activity is being evaluated.

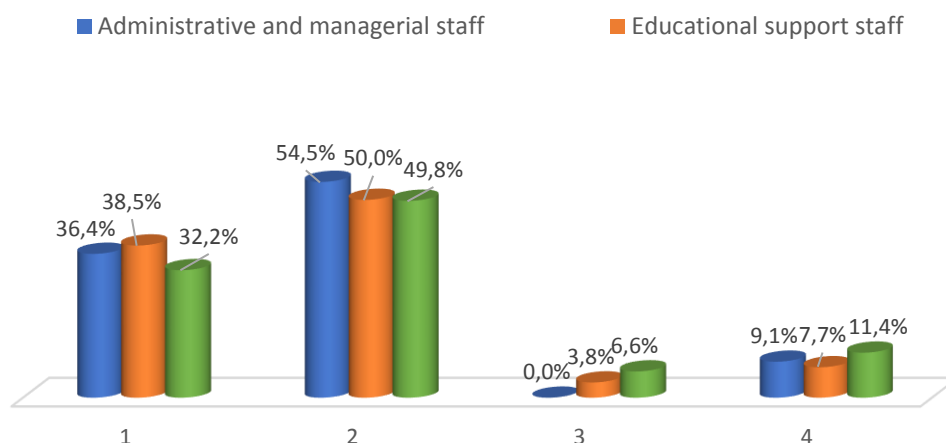
The system for assessing the quality of professional activity of teaching staff, faculties and departments of the University should be as simple and clear as possible, not only for the heads of educational organizations and teachers themselves, but also for other interested parties, and it should be based primarily on obvious and generally accepted indicators [24]. Rating assessment allows make optimal management decisions related to the strengthening of human resources, certification of teachers, their professional motivation, and the definition of priority goals in the field of quality management of training at the University[25, 26].

The system for monitoring the University's performance (rating) is based on the idea of an individual numerical indicator of the activity of a particular teacher, Department, or faculty. The teaching staff is divided into four qualification categories: "professors", "associate professors", "senior teachers", "assistants". Evaluation is performed within each category, which ensures comparability of results. The distribution of teachers by category is based on the position held. In addition to rating points, teachers can receive points from the teacher incentive funds. departments and deans of faculties. The ratings of departments and faculties are calculated based on the faculty ratings. Data from the relevant information systems, as well as through the system of personal accounts, are taken as the source for determining the rating of teachers, departments, and faculties.

Thus, to improve the management system of educational processes of the University from the point of view of using ICT, it is necessary to use them in a comprehensive manner within the framework of building a unified information and educational environment. One of the important aspects of the effective functioning of the IOS is the high degree of integration of its component information systems aimed at automating individual business processes in the educational subsystem of the University.

## 5. Results

In order to evaluate effectiveness of Belgorod state university information systems functioning, measure employees' and tutors' attitude to ICT and formulate the directions of educational management improvement a sociological study was conducted. The research evaluates employees' and tutors' attitude to unified educational system user experience. The study involved 248 users of information systems, who constitute the information infrastructure of BelSU: employees of various faculties, departments, directorates and tutors. 85.1% of respondents fall into the category of teaching staff, 4.4% - into the category of administrative and managerial staff and 10.5% – into the category of educational and support staff.



**Figure 1:** Distribution of respondents' answers to the question about the significance of information and communication technologies usage to improve the effectiveness of the University's educational process management by position: 1 – the use of information and communication technologies improves the effectiveness of the educational process of the University; 2 – Use of information and communication technologies increases the effectiveness of educational process management of the

University only if they are used in a comprehensive manner within the unified educational space of the University; 3 – The implementation of information and communication technologies in any case reduces the effectiveness of the educational process management of the University; 4 – I am not sure.

The vast majority of respondents believe that the use of information and communication technologies (ICT) contributes to the improvement of the educational process of the University. Most of respondents believe, that a positive effect is possible only in case of complex usage within the unified information and educational space of the University (50.0%). Only 6.0% believe that the implementation of communication technologies in any case reduces the effectiveness of the University's educational process management. 6.8% of respondents from the category of teaching staff claim that the implementation of information and communication technologies in any case reduces the effectiveness of the educational process management of the University, compared to 3.8% of representatives of the support staff and 0% - administrative and managerial staff (Figure 1). Table 1 depicts average ratings (five-point scale) of information security in the educational management system of BelSU, which are ranged in decreasing order. Results of the study presented in Table 1 show that survey participants rated the information security of educational processes by 3.7 points at average. The highest ratings in terms of information security were received by the following processes: class and exam schedules setting (av. score – 4.1), library service (av. score – 4.0); the lowest ratings were received by the graduates' employment process (av. score – 3.3) and drafting of educational programs and curricula (av. score – 3.5).

**Table 1**

Assessment (five-point scale) of information security of processes in the educational management system of BelSU

№ п/п	Process	Average score
1.	Schedule setting	4,1
2.	Library service	4,0
3.	Organization of the Final State Assessment	3,9
4.	Study process control	3,8
5.	licensing and accreditation of educational programs	3,7
6.	calculation of the total training load and staff, distribution of training load;	3,7
7.	organization of production (pre-graduate) practice;	3,7
8.	introduction of modern educational technologies, electronic and distance education systems	3,7
9.	creation of textbooks and e-learning tools	3,7
10.	marketing activity, selection of applicants	3,6
11.	development of training programs and curricula	3,5
12.	Graduates' employment	3,3

A significant difference in the assessment of information support of processes can be explained by the fact that not all processes of the educational subsystem of BelSU operate on the basis of modern ICT. For instance, there is no information system, which fulfills the functions of information support for graduates' employment process, at the same time this process was rated by respondents as the least information-secure (cf. 3.3 points). Likewise, it should be noted that library services (which received one of the highest ratings of information security – 4.0) has a robust information support. It consists of portal of the scientific library, electronic catalog, access to information databases and libraries, and electronic services. Information support for the schedule setting process – which received the highest rating of 4.1 points – is implemented by the "Electronic schedule" system. The "Electronic schedule" system is quite simple, clear, informative system, which is used by a significant number of employees, tutors, students of BelSU and external users.



In order to detect the problematic aspects of the Pegasus portal using experience and ways to improve its functions, respondents participating in the sociological study were asked to evaluate the Pegasus portal on a five-point scale. The results of the survey are shown in Table 2. The presented results show that users of the Pegasus e-learning system generally evaluate IP satisfactorily, with an average score of 3.6 on seven criteria. The average rating indicates that there are problems in the functioning of this system and it is necessary to work on its improvement. The lowest score was received by ergonomics, ease of use and reliability (average score is 3.5). There are also problems with the quality of the design, usability of the interface and system's maintainability – the average score is 3.6. The highest rate was given to multifunctionality of the system (average score – 3.8).

**Table 2**  
Rating (on a five-point scale) of the Pegasus e-learning portal

Nº	Criteria	Average score
1.	Multifunctionality	3,8
2.	Practical value	3,7
3.	Quality of design, usability of the interface	3,6
4.	Ergonomics. Ease of use.	3,5
5.	Level of integration into the information and educational space of the University.	3,7
6.	Robustness	3,5
7.	Maintainability	3,6

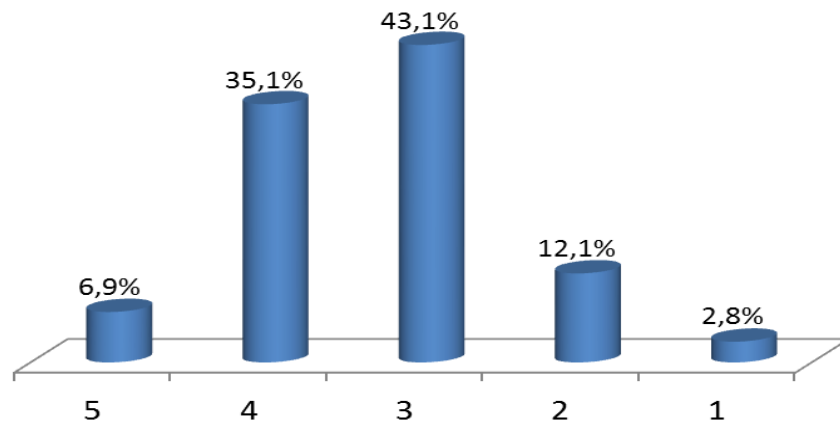
Participants of the sociological survey "Research of the problems of using information and communication technologies in the management of the educational process of the University" evaluated the portal Info\_Belgu: Educational process (educational programs, curricula, workload, etc.) (Table 3.). The average score for 7 criteria is 3.9 points (the Pegasus system has 3.6 points). At the same time, the respondents rated the practical usefulness quite highly (average score – 4.1), putting the most "fives" – 88 out of all criteria, 3 portals studied. The system also received the lowest ratings for its ergonomics, ease of use and reliability (average score of 3.7), and for its maintainability of 3.8 points.

**Table 3.**  
Evaluation (on a five-point scale) of the Infobelgu system: Educational process (educational programs, curricula, workload, etc.).

Nº	Criteria	Average score
1.	Multifunctionality	3,9
2.	Practical value	4,1
3.	Quality of design, usability of the interface	3,9
4.	Ergonomics. Ease of use.	3,7
5.	Level of integration into the information and educational space of the University.	3,9
6.	Robustness	3,7
7.	Maintainability	3,8

The conducted research has shown that users of information systems used in the educational sphere (employees and tutors of BelSU) evaluated the effectiveness of IP functioning by not very high score. The average rating of the portal "Pegasus" (3.6 points) and especially BelSU (3.9 points) is closer to the "four", and the NPR rating system has earned a "solid" "three" (3.3 points). Respondents revealed the problematic areas of information systems functioning: ergonomics, ease of use, reliability of operation, and practical usefulness for the NPR rating system. The results of the study showed that the integration of information systems of BelSU used for the organization of the educational process, automation of procedures for the educational subsystem management, as well as information and

analytical systems to support decision-making, is quite far from perfect. Only 6.9 % of respondents are fully satisfied with the level of integration of information systems, the majority of respondents (43.1 %) chose the option "more satisfied than not" and almost every sixth (14.9%) is not satisfied with the degree of integration of IP (Figure 2).



**Figure 2:** Satisfaction with the level of integration of information systems in BelSU: 5 – fully satisfied, 4 – more satisfied, 3 – more satisfied than not, 2 – less satisfied, 1 – not satisfied.

A significant part of the employees of BelSU who took part in the survey believe that the following tasks should be solved first of all: creating of a unified information space in the University (55.2%); creating of an integrated repository of information and data (42.3%); increasing the level of openness and flexibility of the existing information support system for the educational process (37.9%). The respondents' suggestions on the effective use of information and communication technologies in the management of the educational process of BelSU also indicate the need to build a unified information and educational environment. The most common suggestions from respondents are the need for:

- usage of a single information and educational space;
- creating a user-friendly interface for information systems;
- centralization of data collection and processing, and eliminate duplication of data requests.

The main problems of information infrastructure functioning in the educational sphere of BelSU were identified: insufficient integration of all educational information systems; unsatisfactory ergonomics of information systems; insufficient reliability of operation. Only 6.9 % of respondents are fully satisfied with the level of integration of existing information systems, and only 32.3% of respondents believe that a unified information and educational space has been formed in BelSU. More than half (55.2%) of the respondents believe that the main task, which should first be solved to improve the educational process management system of BelSU, is further improvement of the unified information space of the University.

## 6. Conclusion

The obtained results of the research in the direction of improving the management of the educational process through the use of ICT allow us to ensure the systematization of information flows, the relationship between the structural divisions of the University, and in General create conditions for the implementation of the management system of an educational organization based on the data obtained. Thus, the development of information systems in the educational organization, increasing their integration in the unified information and educational environment of the University contribute to solving the problems of complex Informatization and improving the quality of higher education. The conclusions obtained in this study may be of interest to the global educational community in solving issues of optimizing managerial business processes.

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