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Implementing a conceptual model of participative management into an integrated e-learning system

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Abstract

The paper aims at determining the principles of participative management and the nuances of their implementation into integrated e-learning, which complements the traditional forms of education in emergencies, such as the COVID-19 pandemic. The research uses a semi-structured questionnaire adapted from Dashkova for the education sphere and developed with the consideration of participative management principles. The survey involved 289 students and 293 university teachers. The study found that participative management is the best approach to integrating e-learning into the education process.. It ensures effective communication contributing to the uniting of objectives of all participants by expanding their engagement in the management of the education process. Assessment and recognition of participative management in university may be one realistic scenario for more rapid adaptation and effective implementation of diverse learning trajectories.

Keywords: e learning, education, governance, integrated education system, participation, student-centered learning transformation.

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1. Introduction

1.1. Conceptual or theoretical foundations

A participative method is an innovative approach to management characterized by the construction of a labor system based on the direct participation of each employee in various aspects of the organization (Sri & Krishna, 2014). The employees independently form the internal departments of the company, the direction and time of implementation of work activities, thus solving the problems of psychological compatibility and convenient work schedule. They are also active participants in the development, implementation, and promotion of innovative solutions.

Participative governance means regulation of the learning process by all actors, including the administration of the educational institution, teaching staff, student body, and assisting staff (Alyahya & Aldausari, 2021). Its most important feature is that any participant can take part in the improvement and development of the education process (Al Rawashdeh et al., 2021). First and foremost, that means involving the best representatives of the student body. The principles of participative management are enshrined in regulatory documents of the educational institution. The best students involved in it are financially and morally stimulated. It is important to keep in mind the strengths and weaknesses of participative management (Alyahya & Aldausari, 2021). The advantages of participative management are increased motivation of students to successful learning, formation of a favorable social and psychological climate in the classroom, better cooperation between teachers and students, and improved teamwork. The weaknesses include the fact that not all students involved in the management of an educational institution are sufficiently prepared to make quality management decisions. In addition, making management decisions is time-consuming and requires comprehensive coordination with all participants (Blieck et al., 2020). Besides, the role of the most qualified managers in making complex management decisions is reduced and dependent on the opinion of insufficiently prepared actors.

Participative management is associated with the introduction of new technological solutions in all spheres of life (Perezolova, 2018). The participative management model of public administration is based on the theory of new public management. However, despite its innovativeness, this model has several limitations, such as the lack of personal responsibility for decision-making (Karlina & Ryazanov, 2016). Participative management in education should involve all stakeholders, i.e., all subjects of the education process, with real leverage to influence educational issues as well as good managerial thinking to increase managerial resources (Karlina & Ryazanov, 2016). Participative management is most in line with modern trends in education, which encourages the involvement of government officials as well as direct providers and users of education – teachers and students. In other words, participative management creates new relationships between the participants of the learning process, when the user (student) and the provider (teacher) become equal subjects of education governance. They have the same influence on innovative changes (such as the active introduction of online technologies) as ministerial officials (Karlina & Ryazanov, 2016). A participatory management model is opposed to both service and bureaucratic models of governance. Despite some limitations, it is preferable for the joint formation of socially significant values by both the authorities and the users who prioritize the quality of education (Karlina & Ryazanov, 2016). That is why participative management is now considered the most popular managerial concept, also referred to as 'co-participative' (Petrovich, 2016). Participatory forms of governance demonstrated their effectiveness in the organization of joint labor activities in enterprises, cooperative movements, and corporations. Now they are being implemented in the education process, ensuring the effective use of human

resources in vocational training (Petrovich, 2016). The scientific management theory explores the most coherent techniques and methods of management, such as the formation of organizational structures, distribution of responsibilities, planning, accounting, selection and distribution of staff, and maintaining discipline (Petrovich, 2016). Participative management in education should engage students and teachers at the level of the university, faculty, department, and other organizational units.

The introduction of the participatory approach in education is dictated by both technological progress and the priorities of the socially oriented state, which involve rapid adaptation to socio-economic changes and maintenance of creative activity. The latter is important for achieving original results based on the realization of individual abilities and talents and ensuring the priority of spiritual values over economic ones (Dashkova, 2017). Traditional management approaches work poorly for new technological conditions and new people, which justifies the need to switch to participative management in education (Dashkova, 2017).

A sharp difference in access to the materials and/or infrastructure of the Internet is called 'the phenomenon of digital differentiation'(Gray et al., 2021). The pandemic has exacerbated the problem of equal access to the Internet, affecting even developed countries such as England and Germany, and leading to the conclusion that key issues in education and distribution of national infrastructure need to be revisited (Gray et al., 2021). Presumably, participative management will contribute to a faster and more effective solution to these problems.

The present research adheres to a single logic of research thought concentrated upon the issue of constructing an integrated e-learning system. Within the framework of the investigation and elaboration of survey procedures using a semi-structured questionnaire developed under the principles of participative management, this work relied upon the results of the study conducted at the Abai Kazakh National Pedagogical University. The central emphasis of this work was set on the three-level measurement of the digital construct of student-centered learning with mandatory compliance with the principle of participation. The participative approach to the transformation of student-centered university learning is believed to act as a means of achieving the goal at each higher education level (bachelor's, master's, doctoral degree) and provide the result in the process of integrative building of individual digital routes and educational trajectories (Zhiyenbayeva & Abdigapbarova, 2020). Today's education environment cannot be imagined without digital technologies. Educators, many of whom were initially conservative and skeptical about distance learning, discovered the potential of e-technologies to better engage students in learning. Learning content and interactions are becoming accessible through mobile devices both in and outside the classroom (Carroll et al., 2021). One of the primary goals in digital education today is to identify the most effective ways to use mobile and online technologies to engage students. Carroll et al. (2021) propose a practical model of student engagement through individual tasks and using environmental factors, such as mobile and online learning technologies. Alyahya and Aldausari (2021) developed an electronic collaborative learning environment to help students during preparation for standardized tests. Al Rawashdeh et al. (2021) highlight the advantages and disadvantages of e-learning. E-learning supports students in the collaborative, cognitive, interactive, and social aspects of the learning process, optimizing the teaching process. Online education also increases the opportunities for contacts among students and between students and the instructor. The problems of e-learning are insufficient digital literacy of parents, which makes them unable to control their children's learning, and difficulty in understanding the difference between e-learning and regular classroom education by both students and teachers, which affects the quality of student performance (Al Rawashdeh et al.,

2021). Ørngreen et al. (2021) found insufficient attention of online platforms to the problem-based learning that forms the pedagogical basis of curricula. Another study showed that distance learning is often limited to the exchange of information and instructional materials rather than project-based learning activities, indicating the need for improved education management systems (Recke & Perna, 2021).

Online courses for teachers can raise education standards and the use of digital technologies allowing teachers to integrate new theoretical perspectives and their professional experience into the online learning community (Krzyszkowska & Mavrommati, 2020). The introduction of e-learning technologies also has implications for administrators, practitioners, and researchers. The key to the acceptance of digital learning technologies is the extent to which decisions about their use are informed by affective and cognitive factors (Sadeck et al., 2020). Institutions considering online and blended learning face the challenge of designing, implementing, monitoring, evaluating, and improving the quality of programs and courses. This challenge can be addressed by effective management based on principles of continuous quality improvement (Blieck et al., 2020). A modern approach to effective governance promotes synergies, dialogue, and consultation among all education stakeholders to strategically assess and improve the quality of curricula and courses (Blieck et al., 2020).

The primary driver of change in the higher education curriculum is the learning needs of society. The open online learning approach is the most appropriate way to meet the educational needs of today's digital and networked society in new, timeless, and borderless spaces, where individuals are always connected online, sharing and co-creating knowledge (Volungevičienė et al., 2020).

1.2. Related research

The restrictive measures introduced during the COVID-19 pandemic gave rise to the rapid introduction of e-learning even in those professions where it had previously seemed limited or impossible, such as occupations involving interaction with people. At the same time, the transition to online education revealed several complex problems, for example, the absence of high-quality Internet connection or the specific content and values of the educational programs. The key question is to what extent e-learning meets the goals and objectives of education and whether it is capable of replacing decades-old traditional teaching mechanisms and providing the appropriate level of moral education for the individual (Carroll et al., 2021). The authors tend to view online learning as an additional form of education, which has to be used in special, emergency situations, such as quarantine restrictions due to the COVID-19 pandemic. Ensuring the efficiency and quality of education in this case requires mixed forms of learning integrated into an e-learning system. Such a system can be built on the principles of participative management.

Following the systems approach, participative management should be implemented in all forms of e-learning: individual study, distance learning, online consultations with teachers, social networks used for virtual learning activities and distance interaction, and online libraries (Sri & Krishna, 2014). Volungevičienė et al. (2020) provide a rationale for implementing a multidimensional, integrated, student-centered, small-group e-learning system capable of integrating progressive innovative changes into university practice. Rajasekaran et al. (2022) emphasize that e-learning management must meet user demands. The growing popularity of e-learning raises the importance of improving management systems. (Ngafeeson & Gautam, 2021; Zhiyenbayeva et al., 2021). Acknowledging the importance of such online learning components and a new educational paradigm have become

evident during the COVID-19 pandemic. The prerequisites to online learning are the sufficient level of information culture among education managers and officials, teachers, and the population in general, as well as the availability of quality Internet connection and modern computers for both teachers and students. The question of the effectiveness of online education and the quality of knowledge it provides remains open and requires additional in-depth study. Preliminary research has shown ambiguous results of the transition to e-learning. Many countries were not ready for the transition from traditional classroom-based to online learning, not supported by the curricula and programs. Teachers did not have enough computer skills, and students from remote areas did not have access to Internet networks. Quality online education in times of emergency, such as the stringent COVID-19 quarantine measures, means the ability to get advanced knowledge from anywhere in the world at any time and in any place (Sri & Krishna, 2014). It requires not only Internet connection and gadgets, but also innovative pedagogical technologies, new teaching materials, curricula, and programs focused on the practical component of the learning process. Integral learning ensures the unity of knowledge, skills, and abilities acquired by students. E-learning, as an innovative educational approach, has the important task of forming a competent specialist able to master the theory and independently solve practical professional problems.

1.3. Purpose of the study

The paper generally focuses on education management in universities with special attention to the process of building an integrated e-learning system. The specific purpose of the study is to determine the principles of participative management and the nuances of their implementation in an integrated e-learning system, which complements traditional education forms during the emergency situations, such as pandemic restrictions. Research objectives include (1) analyzing scientific literature on participative management in e-learning, (2) conducting an empirical study to identify the specifics and determine the effectiveness of the participative management principles for building an integrated e-learning system (SWOT analysis to identify strengths and weaknesses of collaborative governance in e-learning), (3) creating a logical conceptual model of participative management of an integrated e-learning system. The research hypothesis is that the implementation of the participative management principles increases the efficiency of an integrated e-learning system.

2. Materials and methods

2.1. Research design

The study was organized in several consecutive stages. The first stage involved the analysis of scientific literature on participative management in integrated e-learning systems. The second stage consisted in developing the methodology and carrying out empirical research aimed at studying the current situation with participative management and its impact on the development of the integrated e-learning system at Kazan State University. At the third stage, research results were analyzed, followed by conclusions and practical recommendations for educational institutions.

2.2. Research materials (study participants)

The study was conducted at the Abai Kazakh National Pedagogical University and Federal State Autonomous Educational Institution of Higher Education “Kazan (Volga Region) Federal University” (hereinafter referred to as Kazan Federal University). The university is one of the oldest educational institutions in the Russian Federation, founded in 1804. It has been the flagship of education for many

years. Kazan Federal University received the highest' 5+ stars' rating in the QS Stars system of the QS rating agency (91.6 points out of 100). A total of 600 questionnaires were distributed at the university (300 for students and 300 for faculty). There were 289 students and 293 teachers randomly selected for the survey (the method of simple randomization was used, as it is resistant to selection and random deviations). The remaining questionnaires were not filled out completely, so they had to be excluded from the study.

2.3. Research method (Data collection tools)

The research draws on a systems approach, the laws of personality and society development, activity theory, socio-pedagogical concepts of higher education and education management, teacher-student interaction, as well as the principles of modern e-learning technologies. The study uses a range of methods: literature review, systematization and synthesis of information, data collection (questionnaire), quantitative and qualitative analysis, conceptual modeling (creating a logical conceptual model of participative management of an integrated e-learning system), SWOT-analysis (identifying strengths and weaknesses of participative management in e-learning).

2.4. Data collection process

The paper uses a semi-structured questionnaire adapted from Dashkova (2017) that covers key participative management principles. Each statement of the questionnaire was evaluated on a 5-point rating scale (completely disagree, mostly disagree, difficult to answer, mostly agree, completely agree). Statistical processing of the results (determining the statistical reliability and the correlation coefficient) was conducted with the help of an online calculator at www.medstatistic.ru.

2.5. Data analysis

Results can be considered representational for the majority of universities in the Russian Federation and the Republic of Kazakhstan. However, there are small higher educational institutions located on the periphery, where the situation with management and implementation of e-learning may be different. This topic requires additional research.

The results are expected to correlate with similar data on the most popular foreign universities, but there could also be differences related to ethnic and cultural characteristics, the specifics of state structure, and the level of technological development of countries.

Ethical issues were addressed by ensuring compliance with bioethical principles reflected in international and domestic legal documents. The research obtained informed consent from all participants and ensured their anonymity. Age and gender issues were not taken into account in the research. No additional funds were allocated for the research. No conflicts of interest arose in the course of the research.

3. Results

The average survey scores for students (A) and teachers (B) on the main aspects of participative management in an integrated e-learning system are given in Table 1.

Table 1. The implementation of participatory management elements in e-learning

Participative management principles	Average score		Student t-test	p
	A	B		
Creation of conditions motivating all stakeholders to participate in decision-making and enhancing their interaction in the process of building an integrated e-learning system	3.5±0.5	3.8±0.1	1835.12	<0.05
Promotion and support of non-standard approaches to solving educational tasks	3.8±0.05	4.1±0.1	2.12	<0.05
Support of effective communication between all stakeholders in the education process	4.1±0.03	4.3±0.01	1.41	>0.05
Guaranteed access to information and its transparency; ensured understanding of the essence and meaning of innovative changes by each participant	4.6±0.02	4.6±0.05	0.00	>0.05
Trusting and friendly attitude of management to all participants of the education process	4.0±0.5	4.2±0.01	1.41	>0.05
A focus on the development of highly demanded competencies and knowledge	4.8±0.02	4.7±0.05	0.71	>0.05
Prevention of professional burnout and stress management programs	3.4±0.1	4.0±0.1	4.24	<0.05
Continuous development of the university achieved by harmonization of all stakeholders' objectives and expansion of their participation in education management	3.9±0.1	4.0±0.1	0.71	>0.05
Consideration of internal and external factors in an integrated e-learning system (labor market needs, social partnership, professional mobility, etc.)	4.5±0.1	4.6±0.05	0.71	>0.05
Focus on the principle of participation (co-participation) of all stakeholders	4.7±0.2	4.8±0.2	0.71	>0.05
Group and individual participation of both teachers and students in solving problems of the integrated e-learning system	4.7±0.2	4.8±0.2	0.71	>0.05
Flexible, transparent, differentiated stimulation of participants in building an integrated e-learning system based on the individualized evaluation of their activity	3.6±0.03	3.7±0.02	0.71	>0.05
A focus on the development of professional, creative, intellectual, and organizational skills of a person	3.9±0.02	3.6±0.5	2.12	<0.05
Consideration of the needs of all stakeholders in building an integrated e-learning system	4.1±0.03	4.6±0.02	3.54	<0.05
Ensuring the connection between e-learning management and the university's strategy and human resource policy	3.6±0.03	4.3±0.02	4.95	<0.05
Providing each participant of the education process with a possibility to initiate changes in the system, come up with initiatives and innovative suggestions for optimization and improvement of the e-learning process	3.9±0.2	4.3±0.1	2.83	<0.05
Ensuring feedback, use of sociological surveys for informing, timely identifying problems, and making adjustments	4.4±0.05	4.3±0.01	0.71	>0.05
Analysis of university staff policy and human resource management	3.0±0.07	3.8±0.06	5.66	<0.05
Maintenance of favorable moral and psychological climate between participants of the education process	3.8±0.1	4.0±0.1	1.41	>0.05

Teachers' and students' satisfaction with the evaluation of their participation	3.9±0.02	4.3±0.01	2.83	<0.05
Scientific rationale and support of the process of building an integrated e-learning system	3.9±0.2	4.8±0.02	6.36	<0.05
Discussing options for the involvement of teachers and students	3.6±0.01	4.4±0.06	5.66	<0.05
Understanding by each participant of their role in the construction of an integrated e-learning system	3.9±0.06	4.1±0.07	1.41	>0.05
Ensuring that each participant can combine their personal goals and the goals of the university	3.2±0.1	4.0±0.06	5.66	<0.05
The presence of a synergistic effect from the collective solution of the issues related to building an integrated e-learning system	4.1±0.03	3.9±0.02	1.41	>0.05
Impact of an integrated e-learning system on quality of education and student performance	3.7±0.03	3.8±0.06	0.71	>0.05
Correlation coefficient	0.704		4.859	<0.05

The implementation of the new paradigm of higher education based on the integrated e-learning system and participative management are schematically presented in Figure 1. The logical conceptual model reflects both the main components of participative management and key aspects of education quality assessment by QS Stars.

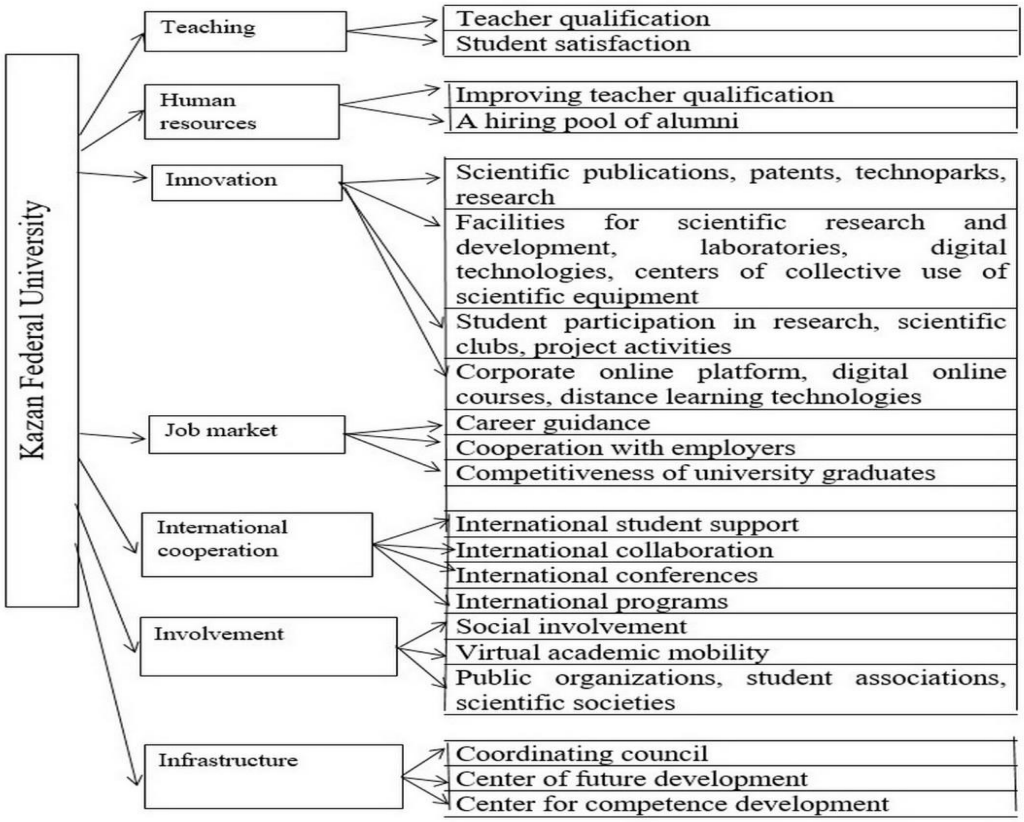

Figure 1. A conceptual model of participative management in an integrated e-learning system at Kazan Federal University

4. Discussion

Modernization of higher education is aimed at developing students' key professional competencies, such as critical thinking, effective communication, independent decision-making, and competent actions in complex and unpredictable situations, which requires both theoretical knowledge and practical skills (Al Rawashdeh et al., 2021; Blieck et al., 2020). The transition to digital online learning requires innovative thinking and computer literacy of teachers combined with an appropriate level of material resources and education management (Blieck et al., 2020; Krzyszkowska & Mavrommati, 2020). Preparing competitive professionals in e-learning requires the integrity of knowledge, skills, and abilities, which implies the reformatting of the management system at a qualitatively new level (Krzyszkowska & Mavrommati, 2020; Volungevičienė et al., 2020). The emphasis on independent work of students who become equal participants in the education process determines the choice of a participative form of management, which matches the objectives of an e-learning system in the best way (Carroll et al., 2021).

Kazan Federal University and Abai Kazakh National Pedagogical University were highly evaluated by the QS rating agency according to its audit system. Each of the eight parameters (teaching, employment, non-staff development, internationalization, infrastructure, innovation, social involvement, curriculum) received the highest score of 5 stars. The results were achieved primarily due to the effective university management system. Building an integrated e-learning system is one of the university's priorities. The paper studies the effects of participative management on this process. The survey involving 293 teachers and 289 students was aimed at assessing the implementation success of different participative management aspects. The questionnaire consisted of 26 questions with a 5-point rating scale.

The respondents gave the highest score to participation (co-participation), as an important principle of e-learning management. The statistical difference between the teachers' (4.8±0.2 points) and students' (4.7±0.2 points) responses was insignificant ($p>0.05$). Another important aspect of participative management was access to information, transparency, and understanding of the essence and meaning of innovative changes by each participant of the education process. These are the most important indicators which determine the involvement of participants in building an integrated e-learning system and reflect their innovative activity. The integrative aspect of an e-learning system implies consistency, interrelation, and interdependence of the system components. The information component determines the effectiveness of the university's innovative activities at all levels. Both teachers (4.7±0.05 points) and students (4.8±0.02 points) noted that the construction of an integrated e-learning system often depends on highly demanded competencies. This aspect can be viewed as an additional stimulating factor of participative management. According to Dashkova (2017), any object or action can be considered as a stimulus if it activates a person's needs and motivates them to action, transforming the needs into motive and aspiration to get what is offered as an incentive and the main element of stimulation.

The interviewees also agreed that each participant of the e-learning process had the opportunity to initiate changes (teachers = 4.3±0.1 points, students = 3.9±0.2 points). Ensuring feedback and using sociological surveys for progress assessment was also widely implemented in participative management of the e-learning process according to both teachers (4.3±0.01 points) and students (4.4±0.05 points). Teachers' and students' evaluation of their role in e-learning management (teachers = 4.3±0.01 points, students = 3.9±0.02) was different. The teachers assessed their participation in education management slightly higher than students, which is confirmed by the statistically significant

difference in these indicators. It shows that universities should pay higher attention to student's involvement in managerial activities.

Studies indicate that the effectiveness of participative management can be evidenced not only by the indicators of satisfaction with the incentive system, but also by the team cohesion, commitment, and development of corporate culture (Dashkova, 2017; Kazaieva, 2014). The presence of a favorable moral and psychological climate in the process of building an integrated e-learning system is ($p>0.05$) confirmed by both teachers (4.0±0.1 points) and students (3.8±0.1 points). Good psychological climate enhances other aspects of participative management, such as effective communication (teachers = 4.3±0.01 points, students = 4.1±0.03 points) and harmonization of all participants' goals (4.0±0.1 and 3.9±0.1 points by teachers and students respectively, $p>0.05$).

The teachers and students assessed burnout prevention and stress management programs aspects differently (4.0±0.1 and 3.4±0.1 points respectively, $p>0.05$). Teachers are usually quite satisfied with working conditions and management's actions regarding professional burnout prevention, whereas students receive less attention regarding the reduction of stress induced by the learning process. Students, being in a situation of constant evaluation of their knowledge, experience chronic stress. The introduction of innovative forms of learning enhances the stress and adds a sense of uncertainty. Therefore, the implementation of participatory management principles should be aimed at developing appropriate preventive and correction psychological methods to reduce students' stress levels.

One of the most significant factors ensuring the effectiveness of participative management noted by both teachers (4.8±0.02 points) and students (3.9±0.2 points) is scientific rationale and support of developing the e-learning system. However, the score for this indicator given by teachers and students statistically significantly differs even more than for the issue of professional burnout prevention ($p <0.05$). It points to the necessity of students' involvement in the scientific rationale and monitoring of participative management in e-learning. Students' engagement in participative innovation management research will contribute to the development of independent work skills, critical thinking, creativity, i.e., the formation of necessary professional competencies (Blieck et al., 2020; Ørngreen et al., 2021; Rajasekaran et al., 2022).

Speaking about the components of the participative management model, one should note the perspectives of e-learning and blended learning through the corporate platform Microsoft Teams, digital education courses, and/or online courses of other universities offered on open online learning platforms. These opportunities enhance virtual academic mobility and engage leading national and foreign teachers. Federal centers for collective use of scientific equipment expand opportunities for developing professional competencies and ensure high competitiveness in the international labor market. A wide range of additional educational services provided at centers for competence development is aimed at the improvement of foreign language and managerial skills. That is why students highly assessed the development of professional, creative, intellectual, and organizational abilities of an individual in a participative management system (3.9±0.02 points). Teachers' score was slightly lower (3.6±0.5 points), which indicates their desire not to stop at what has been achieved and to develop new promising approaches to learning.

An important step in the development of the participative management model was the creation of Student STEM Park and Management Council "Sanaly urpaq" in Abai Kazakh National Pedagogical University as well as the creation of the Coordinating Council of public student organizations and associations in Kazan Federal University. The Council consolidated an effective system of student government and helped to raise the role of students in the modernization of higher education by

building a functional e-learning system. The student affairs are also supervised by the university's Department of Youth Policy.

The vertical and horizontal unity of participative management was achieved with the creation of the Center of future development based at the Institute of Advisors to the Rector of Kazan Federal University. The Center is responsible for coordination, planning, methodology development, documentation processing, and organization of collaboration between Russian and foreign scientists in the sphere of e-learning and other innovative projects and programs according to the university's strategy. The achievement of effective participative management in the construction of an integrated e-learning system in Abai Kazakh National Pedagogical University became possible owing to the "Digital Kazakhstan" state program.

5. Conclusions

Training competitive professionals in e-learning requires the integrity of knowledge, skills, and abilities. This integrity can be achieved only through a qualitative reformation of the management system. The current emphasis on students' independent work, their engagement in the education process as equal partners implies the preference for participative forms of management. Participative management is also the best approach to integrating e-learning into the education process.

Two aspects of participative management were considered to be the most important, according to the survey participants at Kazan Federal University and Abai Kazakh National Pedagogical University: the principle of participation (co-participation) of all stakeholders (4.8±0.2 and 4.7±0.2 points given by teachers and students accordingly, $p>0.05$) and access to information, transparency, and understanding by each participant of the essence and meaning of innovative changes (4.6±0.05 and 4.6±0.02 points by teachers and students, $p>0.05$). These indicators determine the involvement of all participants in the process of building an e-learning system and reflect their innovative activity. The emphasis on the information component is a factor that determines the effectiveness of the university's innovative activities at all levels.

An additional stimulating factor for participative management is a focus on highly demanded competencies and knowledge (teachers = 4.7±0.05 points, students = 4.8±0.02 points). Another important element of an integrated e-learning system is opportunities to initiate changes and make innovative suggestions (teachers = 4.3±0.1 points, students = 3.9±0.2 points). The respondents also highly assessed the provision of feedback and the use of sociological surveys to improve the management of e-learning system (teachers = 4.3±0.01 points, students = 4.4±0.05 points). The teachers' and students' satisfaction with their participation in e-learning management was slightly different: teachers = 4.3±0.01 points, students = 3.9±0.02. The issues of stimulating innovative and managerial activity of students along with the problem of reducing students' stress require more deliberation by university management. According to the respondents, favorable moral and psychological climate is the basis for achieving effective communication between participants (teachers = 4.3±0.01 points, students = 4.1±0.03 points) and ensuring harmonization of their goals (teachers = 4.0±0.1 points, students = 3.9±0.1 points, $p>0.05$) in the process of building an integrated e-learning system.

The implementation of participative management principles in Kazan Federal University helped to create an integral and effective system of student self-government. It increased the role of students in modernizing and improving the effectiveness of education system through the integration of e-

learning and the development of innovative educational programs and projects following the university's strategy.

5.1. Recommendations

The results can be used to improve the management of educational activities at universities during e-learning integration.

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