

Pedagogical Education Modernisation in the University Context

Larisa Bykasova ^{1,*}, Svetlana Garmash ¹, Vladimir Podberezny ¹, Valentina Panova¹,
Yelena Pershonkova ¹

¹ Rostov State Economic University, Rostov, Russia

*Email: moeve-25-moeve@yandex.ru

ABSTRACT

From the essential approach position, the article examines the modern educational organisation formation and functioning as a scientific, educational, training, socio-cultural object that meets the needs of a society; the domestic pedagogical education development priorities and directions are determined; the prospects for the modern pedagogical knowledge formation are identified, this learning is formed under the conditions of the education new paradigm, which characteristic features are digitalisation, network interaction, information transfer distant type, subject's generation of all possible alternatives to reveal the personality individual balance; the dynamics and methodological optics of the modern university research process is analysed; the ways of the pedagogical education available resources rational use are discussed; the methodological practice and the ways of the new practices subsequent multiplication in the university education system, are reflected; the factors, influencing the quality of the modern subject education are established; the degree of the mediatised product influence on the implementation of the contemporary pedagogical university educational strategy is defined; the toolkit of specialist's training and education, demanded by the labor market, is investigated; an approach is implemented, identifying a modern student in his development, which helps to determine the pedagogical substance movement nature, to recreate a holistic picture of the available reserves and means necessary for the personality education at a qualitative level.

Keywords: *Didactic potential, Artificial environment, Education system modernisation.*

1. INTRODUCTION

The first decades of the XXI century have become a period of dynamic changes in Russian society life. Significant shifts have also taken place in the pedagogical education domestic system. Most pedagogical education institutions have become part of the federal universities; the transition to a three-stage (bachelor's – master's – postgraduate) model of the higher pedagogical education was completed. As a result of the legal and regulatory framework radical update, the digitalisation, the transfer to the project management and the international contacts significant expansion, the pedagogical education values, system and infrastructure change qualitatively.

The article's purpose includes understanding the results and experience of the pedagogical education reforming, the priorities and directions determination for the pedagogical education development, the reflection of the network community formation in pedagogical education.

It is necessary to solve several problems to achieve this goal:

- 1) to identify the value priorities and the tools for the pedagogical education development in the short and medium-term;
- 2) to determine the priorities for the modernisation of the innovation activity systems and practices in the pedagogical education;

3) to outline the strategic ways of the pedagogical education individualisation and personification.

2. MATERIALS AND METHODS

Education has deep philosophical, historical and socio-cultural meanings since education is a national treasure; it is the cultural transmission in society and a "soft power". The education's mission is the investment in human capital. The domestic pedagogical education development is an integral part of the social life: the preservation, augmentation and translation of the subject's social experience, ensuring its structural diversification and modernisation; the implementation of the country's socio-economic policy, national projects, teaching strategies.

In this regard, we should ask ourselves the following question: what is a modern educational organisation, a Russian higher school? We believe that a modern domestic university is a cluster of the interdisciplinary and convergent researches in the humanities and natural sciences sphere, successfully implementing the federal, regional, local research projects, developing as an expert, scientific methodological and educational centre, whose activities are aimed at solving the everyday domestic education priority tasks.

The higher education system main challenges at the present stage of social development are:

- 1) staff training;
- 2) development of the National projects, teaching strategy professional standard;
- 3) digital education updating;
- 4) improving the socio-economic policy of the regions;
- 5) scientific and educational consortium creation.

The answers to these challenges will be implementing the need for change, impulses for the innovations' development and input, the situation detailed analysis in the education.

Many famous scientists are engaged in defining the priorities and directions of the pedagogical education development in Russia: the works of M.V. Boguslavsky, E.V. Neborsky [1], A.N. Dzhurinsky [2] are devoted to the historical prerequisites for the education system formation study; S.N. Gavrov and N.D. Nikandrov [3] examine philosophical and methodological problems and principles of education individualisation in their works; the main strategies for the modern pedagogical education development were studied by V.P. Borisenkov, O.V. Gukalenko, A.G. Bermus, V.A. Kirik [4]; the issues of the contemporary teaching staff training are reflected in the investigations of L.V. Bykasova, N.G. Vovchenko, M.V. Krevsoun [5]; M.

Yu. Chernyshev and A. M. Zhuravleva [6] consider the research activities strategic management in a pedagogical university; the tools and models for assessing the results in general pedagogical education became the subject of research by N. A. Barinova, E. V. Karunas [7] etc. We should add to the line of the teachers – researchers' names the following names of the foreign scientists who make a significant contribution to the pedagogical theory and practice development: D. Buckingham [8], S. Lok, M. Tor [9], D. Gibson, T. Broadley, J. Downie, P. Wallet [10].

The methodological regulations in our article are a method for predicting the modern educational organisation functioning; a fundamental, systemic analysis, providing an opportunity to identify the university pedagogical education mission in the changed conditions of the 21st century, which consists in transferring the composite knowledge to the subject and in the forming subject's competencies demanded by an employer; in the educational palette expansion and the modern pedagogical design arrangement, in the educational process institutionalisation and the integration of the educational subject for their subsequent capitalisation.

3. RESULTS

We should turn to the phenomenon of the university pedagogical education and try to present the tools vividly for creating the presents of a new social reality (teachers who will teach Homo Cognoscens); the human capital role and the pedagogical education potential; the strategies for the pedagogical education individualisation and personification; the professional and personal identity, the status and the development of a teacher; the didactic potential of media, digital technologies and artificial environments in the pedagogical education; the flexible management methods in the project operation of the pedagogical education.

A modern university is a platform for the most important scientific projects and new directions of the studies; it successfully and effectively develops in priority areas in the field of science and education, it is also continuously improving the student's teaching quality [11]. The following factors influence the education quality of a modern student:

- 1) the analysis and the implementation of the national scenarios carried out by the university teaching staff, which allows extrapolating the advanced pedagogical experience into the national education system;
- 2) the methodological practice reflection of teachers, students and the subsequent multiplication of new practices by the teaching staff (TS) in the educational process: cultural and academic research projects

implemented with the foreign partners' participation; the scientific and practical conferences with the international participation, held to position the traditions of the Russian education, culture, science; "The construction of bridges" of the youth humanitarian bonds, the assistance in the foreign university partners in the organising and holding of forums in the field of the cultural exchange [12];

3) the horizontal subject-subject connections expansion in modern higher education. These can be some innovative platforms created with the university's teaching staff's participation and direct scientific and methodological guidance. To implement this initiative, the curricula are developed for the basic departments at children resting camps (CRC); students' passage of the camp counsellor practice is provided; the agreements are signed between the university and the CRC about creating a base department. Project sessions on various themes interested in children and adolescents are based on the Russian children centre "Smena". For example, in the summer of 2021, in the Russian children centre "Smena", the topic was "The pedagogical design of the project sessions in the South of Russia for schoolchildren".

So, according to the results of the applications examination and in order to create the conditions for the innovative projects and programs implementation in the system - nursery school - school - university, the innovation platform status was assigned to several nursery schools - MBPSEI n/s No. 99 (Taganrog), MBPSEI "Nursery school 117" (Rostov-on-Don); school business incubator - MAGEI "Boarding school No. 2" (Kazan); "Design School "Tochka" (Perm); "Khoroshevskaya Gymnasium" ("Khoroshkola") (Moscow); School of the Future, or Wunderpark International School (Moscow Region); School named after Jacques-Yves Cousteau (St. Petersburg); MAGEI no. 96 "Eureka-development" named after M.V. Nagibin (Rostov-on-Don); School No. 32 (Krasnodar) and others for the realisation a wide range of projects from "Development and testing of inclusion models for the children with complex combined deviations, including autism spectrum disorders, in the municipal educational environment" to "Creation of an integrated educational project for the children's giftedness development: children's nursery school - school - university", etc.

A network of innovative internship sites for students has been formed to improve the education quality and the innovative activities in the educational organisations of the municipal education system in Novosibirsk. The innovation platform status was assigned to MAGEI Secondary School No. 213 "Otkrytie" in the following areas: "The practice of forming an educational organisation positive image", "The educational practices

of the inclusive education", "Children with the unlimited opportunities", etc.

Kazan Federal University is actively developing the school-university partnership, discovering the new forms of interaction between the institute of psychology and education and the school. The base for the pedagogical practices became: MBGEI "Secondary school No. 167 with enhanced education of individual subjects" of the Soviet district of Kazan; MBGEI "Gymnasium No. 10" of the Aircraft Building District of Kazan; OSHI "IT-lyceum of FSAGEI VO K (P) FU".

Practice-oriented technologies for assessing education quality (Worldskills etc.) are essential requirements for higher education in the 21st century. A modern subject need to develop "soft skills" (project work of students), learning through practice, the experience of mentoring [13]. The Far Eastern Federal University (a participant in "Project 5-100") has developed the cognitive practice appropriate assessment: senior students of non-pedagogical specialities (economists, lawyers, designers) are sent to practice to schools, which led, for example, to the subsequent employment of IT specialists as informatics teachers; physicists - teachers of astronomy, designers - teachers of technology, etc. This practice of FEFU contributed to the existing vacancies filling for the teaching staff in the region's educational institutions.

It is seen that the education system is not a static structure but a living mechanism, responding with the appropriate changes to the challenges of the time. The engine of scientific, technological, social progress is, first, the university. For the successful process of pedagogical education modernisation in an academic context, a modern university should, in our opinion, consider several factors:

- 1) forecasting the competencies that will be in demand in 10-15 years to eliminate the: potential conflicts of interest: employer - university [14];
- 2) the educational process institutionalisation (the transformation process of new, episodic social practices, innovations into the stable structures that have been operating for a long time);
- 3) structuring the consciousness of a modern young person (behavioural and social skills when studying a university program, increasing the level of the subject's mental competencies) [15];
- 4) accounting the growing requirements of parents to the education system (operational data possession: parent meetings, website of the electronic information and educational system, parents' individual counselling;
- 5) the teaching profession popularisation (the dominant influence of the teaching staff corporate ethics, the use of the university administration regulatory powers, the use of the anthropological

practitioners and acmetechnologies for the students' personal and professional development; the methods of designing the psychological and pedagogical activities; the socio-cultural rehabilitation of children and adolescents with disabilities with the help of the occupational therapy; the art therapy methods application in solving the personal problems of students; the visualisation method implementation as a condition for increasing the educational and cognitive activity; the portfolio method as a means for increasing the level of subject's professional and personal development);

6) the educational process upgrade (objectively existing Internet of all life). Today's reality is receiving a significant part of the information by the subject from the digital sources, i.e., the development of virtual communication, local network, telecommunications, capacity for storing and processing data, etc. That is why one of the ways to improve the education quality is the modern information technologies introduced into the educational process: presentation support for classroom studies; placement of educational materials on the e-learning website of the university; creation of own teachers' websites; pages of faculties, departments, teachers in the social networks, etc. [16];

7) the approach implementation, identifying the student in his development. In a modern university, the shared space of education and culture is consistently strengthening, the creative workshops of faculties are developing, the projects related to the local history, the folk art, and the preservation of the historical heritage of our country peoples are implemented;

8) social surfing management: considering the complex social context of students. In the learning process, the students are working out a mechanism for overcoming inequality as a way to equalise the chances of success for people from the different social strata (social conditions, subject's motivation, age, gender aspects, personality flexibility, educational process transparency, etc.) [17];

9) the artificial environment creation. The environment is the surrounding that has a configuration, a navigation system, its information field, a development trajectory, and the potential for the integration interaction; a structure with the properties of connectivity, integrity, controllability, depending on its saturation with the various resources [18].

The modern educational space combines different environments: informational, scientific, aesthetic, creative, socially contact, cultural, sporting, etc. The university educational environment is a structure, including the several interconnected levels that are determined administratively, institutionally, socially, which allows developing the motivational and semantic sphere of the subject; building the educational process based on the productive experience generation;

differentiating the education, considering the unique educational programs formation and implementation.

The artificially created environment provides an opportunity for the education subject to choose the communication preferred forms; it promotes the general didactic principles implementation (accessibility, information scientific nature, education computerisation and informatisation); creates the prerequisites for the implementation of unique didactic principles (information and communication, ideological, information and environmental principles):

1) the diagnostics of the subject education quality (point-rating system, monitoring of the educational progress and quality, electronic information and educational environment, students' survey to identify the satisfaction with the educational process) [19];

2) the education subjects' articulation. Scientific internships are one of the most critical areas of modern university activity, affecting the educational programs quality and the level of the subject's training. The university students are encouraged to participate in grants from foreign countries that allow them to carry out the teaching activities abroad.

We should turn to the forms of the educational programs' implementation, affecting the education quality of a modern subject. The kaleidoscopic nature of the forms will be illustrated with an approximate list: intensive schools (short-term diving); subject-practical "polygons"; social training; educational projects; developing and forming spaces (interactive museums, theatres and cinemas); problem clubs; tutoring centres; historical and ethnographic reconstruction (workshops, quests, foresight sessions); social partnership; interregional and international projects; teamwork; scientific societies; information and communication technologies development; updating the educational content; scientific festivals; heuristic activities; discussions; search seminars; integrated educational technologies development, etc. [20].

Pedagogical education in the academic context urgently requires modernisation and, first, improving education quality. To ensure the student education quality at a university, it is advisable to use the following approaches: system-activity, ontological, nature-oriented, conventional, socio-cultural, holographic, anthropological, competence, etc. We believe that in this case, almost every student, to one degree or another, can manifest the different qualities: educational (new knowledge acquisition o, intellectual culture formation); teasing (individual's self-education); scientific (striving for study, search); social (leadership qualities, initiative, creativity, the ability for personal growth, overcoming the social turbulence); psychosocial (culture of emotions, striving for de-conflicting in society, fostering the dignity and honour in a subject);

communicative (openness, ability to listen to an opponent).

Reflecting on the education quality in a modern pedagogical university allows us to recreate a holistic picture of the available reserves and funds necessary for personality education at a qualitative level, determining the nature of the pedagogical matter movement; evaluating the peculiarities of the modern teachers training [21].

Numerous innovations are aimed at improving the education quality in a modern university:

1) a network form of the educational programs' implementation, when the university cooperates with the technoparks, the colleges and the enterprises, using their modern equipment, qualified teachers;

2) design thinking formation (stages: empathy, focus, generation of ideas, prototype, testing) [22];

3) changing the legal field of the educational organisation (the university is allowed to buy the methods from the private companies and work on them);

4) creation of the transmedia nature long-term developing products (a transmedia product has a complex and flexible architecture, whose borders are open; the development is multi-vector and controlled; the content is holistic, updated);

5) cascade learning;

6) exponential growth in information volumes;

7) the existing but not fully exploited potential of the Internet. The ideology of the young people adaptation to the digital conditions of our time presupposes the formation of their own "compliance-culture" of the education subject, the components of which are network culture, computer culture, digital competence, computer ethics, electronic document management, etc.) [23];

8) a network as a community of users, personalisation of education, a park of training devices and simulators: the ability to choose preferred the communication forms; the general didactic principles implementation (accessibility, scientific nature of information, computerisation and informatisation of education, adoption of platform decisions) [24];

9) the project activities, initiating the events at the university; a platform for an experiment to improve the educational design; the educational palette expansion and harmonisation;

10) obtaining the education quality by a modern subject in the place where he studies.

We should consider several issues of the teacher education modernisation in the university context,

which solution will ensure the non-conflict existence of a specialist in the scholarly society:

1) the teaching staff permanent education with the different focus: obtaining composite knowledge (formalised, emotionally charged), mastering the time management culture, the practice marginalisation, the personal experience dissemination, etc.;

2) the formation of the teacher's research culture. Today, the higher pedagogical school needs specialists who create and use breakthrough technologies in education (STE(A)M-teacher education). For this, the updated curricula and the programs are widely implemented at all levels of the education; training of the pedagogical personnel and the specialists with the necessary competencies for those industries that are still being formed is organised;

3) maintaining the ecological balance of the subject (a new generation technique for monitoring the psychological and psychophysiological state of the subject; the resistance to stress, the development of the persuasion skills and the ability to make the non-standard decisions; the professional inclinations diagnostics about the professional skills, etc.);

4) assisting a modern teacher (emotional autism and diffusion of the professional identity led to the teaching staff mental anorexia);

5) the teaching staff professional development intensive cooperation and harmonisation. In a modern university, it is essential to develop a culture of corporate thinking; when the employees understand that they are personally responsible for the quality of the educational services provided, they realise that the approach to ensuring the education quality should be integrated;

6) the use of recreational education resources. An essential element of improving the education quality at the university is the new ambitious scientific and technological programs implementation.

4. DISCOURSE

Following the meeting of the Presidium of the Council under the President of the Russian Federation for the Strategic Development and the National Projects, the Passport of the National Project "Education", developed by the Ministry of Education of Russia for the period from January 2019 to December 2024, including 10 federal projects, was approved. The goal of the Digital Educational Environment project is to ensure the global competitiveness of Russian education, the entry of the Russian Federation into the top 10 countries in the world in terms of general education quality. Together with the regions and the interested departments, all preparatory work will be carried out to determine the parameters for the education models

implementation; the calculation of the transfer; the necessary information aggregation; accounting for the risks; the criteria defined for the effectiveness of the universities (for the state support provision).

To realise this project and to modernise teacher education successfully in the academic context, the scientific community needs to solve a set of:

- 1) to reflect on the value foundations, the reforming experience, the priorities and the directions of the pedagogical education system transformation;
- 2) to determine the promising lines of the content development, of the pedagogical education scientific, methodological and technological support;
- 3) to modernise the scientific research programs and infrastructures in the field of pedagogical education;
- 4) to form an international network "community of changes" in the field of pedagogical education;
- 5) to consolidate the domestic scientific and pedagogical community;
- 6) to initiate a strategic project for digital pedagogical education development.

In the format of the project for the digital education development, it is supposed to comprehend the level of the subject network literacy. Network literacy is a complex of skills associated with the use of modern information computer technologies and mastering the science of networks. In the educational practice, the science of networks is the structured education of the various academic disciplines to attract the attention of the students to science, engineering, mathematics; mastering the computer technology; expanding the subject information literacy; developing the competencies required by the Federal State Educational Standard, which formation occurs in a complex learning process in the various subjects.

The network literacy of the modern education subject presupposes the formation of the skills necessary for life in the 21st century: the ability to find, to analyse the network patterns in the surrounding systems; applying a network approach to overcome the framework of the individual discipline and to compare the processes taking place in the different fields of knowledge; using a discrete language to be able to display the computer programs data visually; understanding of the basics of modelling; the possession of the digital education subject in the research skills, the network competencies, etc.

The university education modernisation will provide the scientific mainstream. It will contribute to the preservation and enhancement of the best pedagogical practices. It will shape the modern society needs aiming at meeting the educational needs of the subject.

5. CONCLUSION

Thanks to the retrospection of the modern educational organisation formation and functioning, we can identify the analytical tools for the presenters of the contemporary educational reality, based on the subject's thinking independence, his desire to improve the culture; the most optimal ways to modernise the pedagogical education in the academic context: a modern university is a platform for the scientific projects, the new directions of research, it successfully improves the student learning quality; the soft-competencies acquired by the subject, contributing to the renewal of the modern education content. The competencies demonstrate "the reference points", contributing to updating the education content, which is necessary for the domestic higher school in connection with the pedagogical stability emerging risks in the digital education creation; the methodological practice, the ways of the new practices further multiplication in the university education system, the risks affecting the further improvement of the student learning quality, and the ways to overcome them; the factors influencing the modern subject education quality: the historical experience, the national characteristics in the field of the education, the state social policy, the political and economic transformation of the country, the external and internal pedagogical factors (motivation, self-exactingness, striving for self-determination, life experience, support of friends, increasing the prestige of the teaching profession, the creative potential of the teacher, etc.); the student's consciousness growth of the scale of using the intellectual potential, the educational process possibilities (computer technicians, network resources, end-to-end media competence, "stitching" all levels of education). The "mutating" system of the media competence allows the education subject to recognise the patterns and to see the meaning between the areas of knowledge, to develop algorithmic thinking in the trainees, to turn the learning process into the decision-making process, and to improve the education quality of the subject.

The pedagogical education mission in the academic context has the holographic character since the education is designed to preserve and increase the human capital; develop the scientific and educational potential of the modern pedagogical science; provide the educational organisations with the teaching staff; cultivate the economic externalities of the contemporary education subject; become a cultural transmission in the society, initiating the education and training, and accompanying a person throughout his life.

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