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**ONGOING PEDAGOGICAL EDUCATION IN THE CONTEXT OF
EDUCATION INNOVATION CLUSTER**

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Abstract

The article covers the continuous pedagogical education problem in educational innovation cluster context. The timelines of the top, social and pedagogical significance of research stem from Russian education policy priorities highlight objective indicators and competitive results as the most important ones. The commissioning of social services and contemporary challenges trigger a search for new solutions and opportunities for teacher training by higher educational institutions. However, there is still a wide range of recurring problems slowing down professional teacher training in higher education institutions. Teacher training involves new guidance and management system due to which the university transforms the structure of a continuous pedagogical education offering a staged system: the stage of developing schoolchildren's motivation by guidance counselor, ongoing teaching internship in the university, post-graduate multi-faceted young teacher's guidance. Within the guidance and counseling system pedagogy-oriented learning (pedagogy class) being supportive environment for schoolchildren serves as motivation for GGTU prospective students' choosing a teaching career. Professional training of new schoolteachers requires a new approach to management and content of internship. Innovative competence based model of ongoing internship at GGTU has a module structure and creates a new cooperation format between educational institutions within the integrative environment framework. "Professional Pedagogical Navigator" project and the Programme of Young Teachers Guidance is a realization of the post-degree guidance policy.

The new educational model of life-long pedagogical education of the university is implemented in education innovation cluster context and aims at proactive teacher training in modern education.

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Keywords: Teacher, pedagogical continuous education, digital university.



1. Introduction

The strategic constructs of the Russian education policy stem from the priorities highlighting objective indicators and competitive results as the most important ones. Therefore, this challenge to the system of education necessitates autonomy and a greater responsibility and initiative of an educational institution.

However, the problem of competitiveness of pedagogical institutions of higher learning has recently become the matter of considerable debate among professionals and the public. The search for new solutions and opportunities of modern teacher training should be based on the international experience and challenges of the Strategy of research and technological development of Russia (Putin, 2017).

Particularly topical in this case is learning the experience of foreign countries that have achieved some success in education: France, Finland, Germany, Poland.

Thus, in the educational system of Poland, the integral characteristics of the professional activity of the Polish teacher in the field of psychological and pedagogical sciences, described in the monograph M.Kowalczyk-Wałędziak "The sense of professional satisfaction of teachers in society", which are of undoubted practical interest for researchers of the teacher's personality and are reflected in his real professional activity (Kowalczyk-Wałędziak, 2012; Morze, 2013).

When studying the German education system it was revealed that the development of a network of educational institutions and various forms of ongoing education is one of the distinctive features of German continuous education. There are especially numerous professional educational institutions of various levels of training in the system of informal vocational education and professional development, as well as informal and informational education and teaching in the adult education system (Brown, Lauder & Ashton, 2011; Harland & Kinder, 2014; Klieger & Oster Levinz, 2015; Statistical Yearbook of the Federal Republic of Germany 2013, 2014).

In comparison with other countries, Finland is in many respects one of the leaders in the development of the information society. The new government places emphasis on digital education, accordingly, in recent years, digital technologies has been given funding, thanks to which the Finnish schools are more than adequately supplied with modern equipment. The experience of Finland is extremely interesting and important for us in terms of the effectiveness of educational reforms and the conditions for their implementation (New Learning Environment in Finland..., 2016).

At the same time, the official document of the European Union "Specific Future Goals of Vocational Training and Education Systems" states: "While we must maintain differences in structure and systems that reflect the identity of countries and regions in Europe, we must also recognize that our core the goals and results to which we all aspire, are remarkably similar. We must build on these similarities, learn from each other, share our successes and failures ... to advance our European citizens and European society in the new millennium" (The Concrete future objectives of Education ..., 2001).

2. Problem Statement

There is a common opinion about a bad influence of too many reforms on the system of education. It is quite evident though there is no future without challenges.

We will not be able to solve the problems of modern and future professional pedagogical education using only the traditional methods. Thus, a new educational model of the university needs to be created. Proactive teacher training for educational purposes is a future-ready solution.

We must develop not only new ways of teaching staff training, modern education technology, up-to-date social and pedagogical activities but also education innovation cluster. For its successful functioning, we must secure favourable environment such as an optimal balance of the State policy and local public needs, employment sector requirements, employment policy, market condition of educational services (Yusupova, 2014). Professional competence, psychological willingness and trust of all the innovators as well as the availability of the Resource Centre and innovation management system coordinating the main structural units – parties of the education cluster are the advantageous criteria for a new educational model of the university (Yusupova, 2018).

A collaborative experience in the solution of problems with innovation and technology infrastructure serve as benefits in addressing challenges.

3. Research Questions

State University of Humanities and Technology (GGTU) has prepared 40 000 teachers for Moscow region. The results of the contextual and dynamic analysis of GGTU activity have enabled us to conclude that the university serves as an expert and analytical centre for monitoring regional educational needs. Modern education is the basic instrument for creating socio-economic, political and cultural values of the society. Thus, it should be future-oriented taking into consideration economic and social demands for at least 10 – 15 years ahead (Bolotov, Navodnov, Motova & Sarycheva, 2013).

It is becoming increasingly evident that the newly found factors create great strategic initiatives and assign the transformation of the Russian professional pedagogical education. The prime objective includes the improvement of quality of human resources, teaching staff training and enhancement fitting the needs of the society (Skudareva & Osinina, 2017)

4. Purpose of the Study

actualization of the formulated problem, definition of the main positions of professional pedagogical education renewal, solving the topical problem of qualitative change in modern teacher training, and generalization of practical experience on the basis of GGTU.

5. Research Methods

dynamic and contextual analysis of GGTU activity on creation of innovative infrastructure of modern educational cluster in conditions of digitalization with attraction of every possible resource; sociometric (analysis of documents and materials in the context of the indicated problem, direct and indirect observation, surveys and questioning of subjects of education).

6. Findings

The system of teacher training in Moscow region, constituent territory of the Russian Federation, is in top five leaders of Russian education. There have been attempts of revolutionary changes in the

system of teacher training to meet global, national and regional challenges over the recent years. The creation of new schools demand young teachers with critical thinking and the abilities to fit the innovative educational environment and specific features of the modern system of education under altered conditions of professional activity (Skudareva & Osinina, 2017).

There is still a wide range of problems slowing down the process of a professional teacher training in an institution of higher learning. The outdated learning technology, the lack of practice-oriented learning in implementation of major educational programmes and their disability to meet the new challenges in education are the most evident ones. Another issue is insufficient employers' engagement in the educational process that deprives young teachers of opportunities to develop a set of professional competencies. Such competencies are inseparable from thorough knowledge of the subject and metadisciplinarity, personal qualities and responsibility for the future of their country.

Teacher training to be ready for the profession has changed its direction for getting ready through the professional activity. Teacher training through the professional activity involves a new system of guidance and management in pedagogical studies. It is a three-component combination:

1. A pre-university motivation for a pedagogical profession to avoid come-and-go people in this field;
2. Practice-oriented professional teacher training in an institution of higher learning;
3. Social, psychological and pedagogical guidance of young teachers to provide support and to boost a sustained motivation.

Our university offers a staged system of continuing pedagogical education to achieve best results:

Pedagogical inclinations – a pre-university motivation development in the context of occupational guidance for prospective students in schools;

Pedagogical intentions – teaching internship on an ongoing basis;

Pedagogical pathway – a multi aspect post-degree guidance for young teachers.

The model of practice-oriented professional teacher training “Continuous Pedagogical Education: From Professional Counseling to Post-Degree Guidance”, which is being implemented at our university, is based on the creation of a multilevel developing system of continuing professional education guidance. Its main principles are as follows: integrity, tradition, integration and humanization. Its groundwork is laid by means of various structural components: a pre-study acquisition of professional identity, acquiring professional competencies through teaching practice on an ongoing basis, a post-degree adjustment to the professional activity.

In accordance with the above-mentioned issues, it seems appropriate to describe this model beginning with the period of professional self-determination of students in the pre-university period. Enhancing the social prestige of the teacher's profession is the motive for the formation of pedagogical professional and personal competences among schoolchildren. The contents of this process are the organization of vocational guidance among students, aimed at developing the basic and key competences necessary for a teacher; development of stable interest in the pedagogical profession among schoolchildren, organizational and communicative skills, professionally significant qualities, i.e. "flexible" competences; using any available range of resources for professional identity of schoolchildren: infrastructural, organizational and managerial, personnel, informative, teaching, methodological, etc.

It is necessary to emphasize that the specified orientation of GGTU's vocational guidance activities is complicated by a number of factors, among them:

1. The absence of a state order for career guidance, respectively, the absence of a state status;
2. The lack of standard regulation;
3. The insufficient readiness of teachers, parents and other social partners to solve this problem;
4. The lack of modern career guidance tools meeting the social needs of career counselors;
5. Structural transformations in personnel training, organization and content of professional education.

At the same time, the consistent implementation of the university development strategy makes it possible to select pedagogy as a tool for motivating school graduates to choose the pedagogical profession.

GGTU already has three years of experience with pedagogy class in the Moscow region schools within the frames of upbringing educational activities: these are pedagogy classes organized on the basis of the tenth or eleventh grades of a certain school or municipal classes in the territories. They are functioning on the basis of internal and external integration with the models of extracurricular activities and pedagogical workshops. At the same time, the unique project "10-T (T stands for teaching) - pedagogy classes GGTU" is a pedagogy class in the city of Elektrostal, whose work experience is presented in the newspaper "Uchitelskaya gazeta".

The pedagogy class of GGTU in the secondary school № 11 in Elektrostal is an experimental social and pedagogical educational project. It has both the unique format and the unique content. A perspective work plan for the pedagogy class has been developed and is being implemented. It includes various aspects of extracurricular activities for students:

1. Project GGTU "High School - School": training sessions with a teacher - a psychologist of the university;
2. Pedagogical interaction: workshops, master classes, pedagogical interactive immersion course (GGTU teaching staff);
3. Integration into the GGTU learning environment (GGTU Subject Schools, Welcome Days, Olympiads, competitions, etc.);
4. Pedagogical propaedeutics in school: Volunteer School "Bright People", work in the Media Center, professional tests - Try Skills "I am a super understudy" with the reflection of pedagogical practice on an individual basis; essay competitions "Why do I want to be a teacher?", thematic teacher-parent meetings;
5. Activities for teachers of the pedagogy class: conferences of various levels, training seminars, webinars, etc.

Lessons with students of the pedagogy class of psychological and pedagogical focus are held in school. Practical aspect is carried out in the form of trainings, group and individual counseling, etc. The best students of GGTU are involved in non-traditional forms of lessons. Monthly lessons are organized in specialized classes of university faculties, due to the students' educational needs within the frames of Subject schools, which significantly increase the level of professional identity of our future enrollees.

Special attention should be paid to the project to conduct Professional Samples - Tryskills "I am a super understudy". Weekly in the primary school classes students of the pedagogy class, under the guidance of tutor teachers, prepare and give extracurricular lessons. In addition, students of the pedagogy class fill their own pedagogical electronic Portfolio operate on the Edumsko platform. The social activity of future teachers is developing in the process of the "Bright People" volunteer movement. Studying and mastering the municipal educational space, students attend master classes in the leading educational institutions of Elektrostal.

It seems that in this case it is possible to transform the traditional forms into an innovative mutually advantageous format: the teachers of the pedagogy class are ready to participate in joint scientific and practical seminars, conferences, scientific and methodological publications, experimental events. Teachers of the pedagogy class and the school administration also participate in approbation of a new practice-oriented model of the organization of GGTU lifelong pedagogical practice for students living in the city of Elektrostal.

What is the significance of GGTU innovation infrastructure? The innovation infrastructure of the university has the leading role in the implementation of the most modern educational technologies. The transformation of the educational space implies the formation of IT space, the creation of content zones, a multifunctional information centre, etc.

A breakthrough project in 2017 in GGTU was the teacher IT-park project, which strategic purpose is the implementation of innovative educational practices involving students and schoolchildren. The main tasks of IT-Park functioning are the following:

- to increase the level of IT literacy of future teachers;
- to provide additional education in the field of IT-technology;
- to provide webinars, seminars, conferences, master classes, participation in scientific projects, organization of international internships for students in the field of IT technology;
- to prepare students for participation in competitions of professional skills, including Worldskills and JuniorSkills on the competence of IT-sphere.

Schoolchildren and students learn how to create personal sites, presentations, animated films of educational orientation, learn to work with interactive equipment, master additional programs for mobile robotics in the laboratories of the IT park (Kondakov, 2017; Skudareva, Pavlova, 2017).

In the conditions of digital education, an information site has been created on the basis of GGTU. It allows working with potential applicants in a remote format, organizing: audio and video conferences, webinars, and various teleconferences discussions: web forums, e-mail conferences and chat discussions, seminars, on-line discussions.

To initiate the creation of a vertically oriented educational complex for lifelong pedagogical education and to include different levels of subjects on the principle of lifelong educational programs into the innovative structure of the institution of higher education, we will present the experience of another format - the implementation of a practice-oriented model for the professional training of the future teacher in the context of the phenomenon of training a teacher through the professional activity.

Formation of students' readiness for professional and pedagogical activity on the basis of the implementation of a competence-oriented model of lifelong pedagogical practice is conditioned by the

formation of a unified learning environment in the system of integrated practices defining a new format for interaction between subjects of education; optimization of approaches to the organization and content of lifelong pedagogical practice; designing the competence model of the future teacher being ready to implement educational programmes. The organization and content of the competence-oriented model of lifelong pedagogical practice in the conditions of network interaction in the system of integrated practices set a new format for the interaction of parties: the teacher to university, the teacher to student, the student to student. This idea initiates the creation of a network of training schools, the centre of "teachers-tutors".

. This thesis initiates the development of an innovative competence-oriented model of lifelong pedagogical practice, which has a modular structure:

- module1- educational (introductory) training;
- module 2– skill training (pedagogical) internship in the children's holiday camp;
- Module 3 - skill training (pedagogical) internship in the educational institution;
- module4 - skill training (pre-diploma) internship in the educational institution.

This model focuses on the organization and content of the educational (1-2 courses) and skill training internship (3-5 courses), which provides an understanding of lifelong and systematic pedagogical activity, its characteristics in modern conditions, its various contexts, and promotes developing motivation for future pedagogical activity.

A characteristic feature of the approbation of a new model of lifelong pedagogical practice is based on: the principles of continuity, dispersion, updating of methodological approaches to organization and content, activation of network interaction in the "school-university" system and, of course, modular structuring.

During teacher training internship students have a good opportunity to master the skills of inter-sectoral (multidisciplinary) communication, multiculturalism and sensibility, individual and teamwork skills, skills of activity in conditions of complexity and uncertainty, effective communication, conscious and responsible activity, that is, flexible competencies necessary to solve the complex problems of modern education.

The next level in continuing pedagogical education system along with the already established pedagogical inclinations in the process of a schoolchild pedagogical motivation development by means of vocational guidance and counseling at school and pedagogical aspirations in the process of implementation of lifelong pedagogical practice at the university is the forming of a pedagogical path. This is the post-degree multidisciplinary maintenance of a young teacher.

Guided by the social order, GGTU provides programming and scientific and methodological maintenance for young teachers working in the regional educational system and making up their mind to adjust their own professional training in accordance with the needs of the regional labor market, implementing programmes of shortened teaching staff training, providing flexibility and variability of education, continuity and accessibility still maintaining high quality.

The project "Professional Pedagogical Navigator", which presupposes the development and implementation of GGTU Graduates' Maintenance Programme (carrying out activities aimed at creating a regional system of guidance for young teachers' professional career with working experience up to 3 years), can be considered as a practical component of providing postgraduate support for young teachers.

Presumable results of Young Teachers Maintenance Programme implementation can be the following: “keeping up with the profession”; forming an effective model of methodological maintenance and professional competence development; successful adaptation in the profession and professional communities; the formation of a conscious need for lifelong professional education; professional competence and pedagogical skills development.

The expected result of multifactorial model of young teachers’ maintenance implementation is the promotion of beginning teachers’ basic professional and “flexible” competences formation, professional self-awareness growth, positive self-esteem, active life position demonstration, readiness for lifelong learning.

Researching the problem of lifelong pedagogical education in educational cluster innovative infrastructure context it seems necessary to mention accessibility of vocational education in GGTU to students with special health needs and disabilities. GGTU has software that allows to organize work with students having special health needs. Namely: software for reading from a computer screen, aimed at visually impaired people JAWS for Windows version 16.0 Pro. It provides verbal access to the most diverse content, allows to display information on the updated Braille display. Screen magnifier MAGic 13.0 Pro with voice support – a screen magnification software that helps blind and visually impaired people to master a computer, use various office applications and navigate the Internet. NVDA is a free screen access software for Windows OS that allows blind and visually impaired users to work on the computer.

Digital Library System “Lan” mobile application has an integrated service for blind students – speech synthesizer, which allows to work effectively with the system. Using this service, blind students can:

- navigate both in the catalogue and in the text of a book;
- listen to sound books on mobile device;
- adjust the speed of speech playback;
- move on sentences, paragraphs or chapters of a book.

At the same time, electronic system deployment that ensures home access to higher education programmes for people with special health needs, electronic database of training courses formation and availability of vocational education foreground training programmes for people with special health needs; implementation of training pedagogical programmes for students with the use of inclusive education technology provides a lot of new opportunities for innovative teaching methods.

7. Conclusion

Thus, implementing lifelong pedagogical education in the context of innovation education cluster, in the absence of public status for career guidance by universities, the university has developed a regional vocational guidance system providing the selection of prospective and motivated students for teaching profession. The means for teaching motivation turned out to be pedagogy-oriented classes implemented by GGTU, which are functioning in ten Moscow region territories and successfully acquiring the experience of applicants’ innovative vocational guidance. The project in School No. 11 in Elektrostal became a unique experience. The class of integrated permanent line up “10-T – GGTU pedagogy class”

works in the format of Federal State Education Standard for General Secondary Education (FSES GSE) extracurricular activities.

A new university teaching process organization is focused on a future teacher professional motivation and personal identity development based on competence-oriented model of ongoing teaching internship implementation. In this regard, an important area of professionalization is innovation of forms, methods, technology and means of organizing lifelong teaching internship, as well as development and introduction of didactic and methodological innovations in school activities as a pedagogical means for education quality improving.

At the same time, a special role is assigned to the organization of effective postgraduate maintenance and guidance system at the first stages of professionalization, related to personal changes, standard activity regulation. In our opinion, a necessary condition is the formation of a multilevel system of terms and factors that stimulate young teachers' professional and personal enhancement. The purpose of young teachers' postgraduate maintenance should be the promotion of beginners' super-subjective and "flexible" professional competences formation, professional self-awareness growth, positive self-esteem, active life position demonstration.

All the above mentioned steps become possible in the framework of the university innovative infrastructure, a new educational process management and digitalization of educational environment.

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