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Innovative Practices in Pedagogical Education” – a Career-Enhancing Course for Postgraduate Students

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Abstract

Innovative practices within our system of education and their successful implementation depend on both collective and individual knowledge. This particular circumstance determines the necessity of the search for effective terms and conditions of the professional training of prospective educators aimed at engineering and implementing innovative educational practices, evaluation of the contents and techniques of professional knowledge and skills to ensure the implementation of the innovative teaching environment.

Thus, this article sets to conceptualize the specifics of educational processes within the spectrum of postgrad studies with an agenda of training prospective teachers to tackle innovative practices when professionally employed and of singling out psychological and pedagogical terms and models thereof.

Questionnaires were administered on students of teaching majors to determine the lack of intent to implement innovative practices within their professional environment based on the following: low level of theoretical knowledge of innovative practices within a given educational system; low level of creative activities and imaginative thinking, insufficient level of preparation of prospective educators towards engineering and implementation of the said practices. The initiated model of the preparation course motivates prospective educators to assess their chosen professional field with positivity, facilitates and enhances creative abilities, powers of reflection, provides both theoretical and practical knowledge basis necessary for their professional skillset employed at any given educational institution.

Keywords: innovations, innovative vocational activity, psychological conditions, pedagogical conditions, readiness for innovative practices, pragmatic approach.

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Introduction

Contemporary education aims at preparing a new type of teachers, open to innovative techniques while teaching and educating. These conditions require an intensive and forward-thinking course of implementation in all higher educational establishments.

Being an integral part of any given system of education, pedagogical education itself faces serious issues. Conditions and responsibilities that every teacher works under change every day. These specialists have to communicate with students who differ significantly in their social, physiological, and psychological features. More and more children have emotional problems. At the same time numbers of gifted children rise in every sphere of human activity. This is why the new wave of teachers who are capable of tackling complex professional issues is more than ever in demand. A prospective teacher needs new experiences, new depths of pedagogical and psychological knowledge. Our society needs specialists proficient in innovative teaching methods and techniques as well as ample managerial skills (Modebelu & Duvie, 2012).

However, experience has proven that the overall majority of university graduates are not familiar with the concept of innovative practices, do not possess a necessary skillset and are not prepared to apply the techniques in question in their practical teaching routines. This stipulates the necessity of determining the set of pedagogical and psychological conditions and developing a model of aptitude formation enabling the postgrad students to implement innovative practices and activities in their line of work.

Purpose and objectives of the study

According to this study, however, a great number of graduates have little or no idea about any innovation processes within our education system, nor are they sufficiently trained in vocational or organizational skills. Hence, the research field of the given study is the identification of the existing psychological and pedagogical conditions within postgrad educational process organization according to which postgrad students will be fully prepared for innovative educational practices.

Literature Review

Theoretical analysis indicated that the focus of attention has shifted towards innovative practices both in education and social strata. A number of research studies compiled by Karpova (1998) and others addressed the issues of innovative practices as well as pragmatic and systemized concepts thereof. The issues tackling the emergence and development of educational innovations were exploited in studies by Yusufbekova (1991), Karpova (1998). A number of authors classify and specify pedagogical innovations

(Angelovski, 1991; Pyankova, 2009). The management of innovative processes within pedagogical systems is analyzed by Ivanova and Popova (2017), Gorovaya, Erin, and Kharchenko (2005).

At the same time, some issues of prospective educators' aptitude in applying innovative practices have been lacking in research (Serdyukov, 2017). Essentially, the same problems of postgrad students have not been duly looked into (Ericsson, 2015). We need to review the particular manner in which postgrad educational process is organized to ensure that the students receive the necessary aptitude training. It is crucial to identify psychological and pedagogical conditions and to determine the contents of the aptitude model enabling the postgrad students to implement innovative practices and activities (Poekert, Alexandrou, & Shannon, 2016). This validates the relevance of this study and allows to identify the psychological and pedagogical conditions for the organization of the educational process in the magistracy, which helps to prepare postgrad students for innovative professional activities in any given educational institution.

Methodology

The purpose of the study is to substantiate effective conditions and an organizational-content model of the formation of postgrad students' aptitude for innovative educational practices. The research methods used are literature analysis, a compilation of work experience; testing, questioning, expert assessment; observation, analysis of the products of student's activities, modeling, pedagogical experiment, methods of mathematical statistics and processing. The experiment was conducted at Adyghe State University. The research subjects: students majoring in "Pedagogical education" postgrad studies, 120 students in total. An experimental study was conducted in three phases: summative, formative and follow-up assessments.

Results

The study at the ascertaining stage of the experiment revealed a lack of readiness in the subjects with the following indicators: low level of theoretical knowledge of innovations and innovative technologies in the education system; low level of creative activity and creative thinking; low level of skills in creating and implementing innovative projects in the education system.

In the course of the study, the following psychological and pedagogical conditions were distinguished: the formation of positive motivation among the subjects for innovative professional practices, the development of the students' creative thinking and creative abilities to implement innovative forms and methods in educational activities; the formation of knowledge of innovative processes in the education system and the main components of innovative activity; mastering the innovation activity experience by prospective

specialists. The main methodological conditions thereof are components of the educational program, types of activity, and forms of teaching.

The study showed that the projected model should be based on the pragmatic approach to the process of knowledge assimilation (substantive activities of MA students, management and learning processes formation of the said activities); on the systematic approach (systemic orientation towards learning and cognitive activity and the students' creative mindset focus on innovative practices aptitude); on the principle of developing learning, contributing to the development of student's personality, first of all, his intellectual abilities.

The ascertaining phase contained a questionnaire for the postgrad students on various aspects and concepts of innovations in education in order to detect the level of their knowledge and understanding of the topic: the essence of the concept of "innovations and innovative activity", what innovative processes are implemented in the learning process throughout both secondary schools and institutions of higher education; whether there is a connection between creative and innovative activities and the effectiveness of innovative activities if any. During the experiment, we studied other aspects of the issue as well. The students answered the questions to analyze their learning curve and to identify the gaps in their conceptual and professional pattern to improve their understanding of innovative practices as well as benefiting the masters' course "Teacher preparation for innovative professional practices". The acquired results showed that 72% of first-year postgrad students and 30% of the second year are not fully equipped with the theoretical data about the concept of innovation within an educational process and thusly are not fully aware of innovative practices in educational establishments. That is, the students had difficulty with giving examples of innovative processes, and their classification; defining the notions of "innovation", "innovative activity", "novation" etc. The majority of students (68%) were unable to differentiate between the creative and innovative processes; was unable to pinpoint the specific features of the innovative pedagogical activity or its structure.

In order to test their creative mindset, we attempted to ask questions aimed at using both the acquired knowledge and creative abilities. Among the challenging outcomes was the detection of objective and subjective factors that influence the organization and implementation of the innovative pedagogical activity, 24% of students were unable to characterize these factors, 60% did not give full and/or accurate answers, 16% demonstrated an understanding of these factors. Then we explored our subjects' notions of the implications for innovative pedagogical activity, of ways and skills a teacher ought to wield to implement innovative practices on different levels. Duly noted that the students are not fully proficient in

ways of implementing innovative practices, methods and teaching techniques nor do they have sufficient knowledge and understanding of innovative models and projects integrated into the educational process.

This questionnaire provided the following results: first-year postgrad students have a low level of theoretical knowledge about innovative processes within the education system and innovative pedagogical activity as well as low aptitude level in implementing innovative activities in their teaching practice. Questions and tasks aimed at gauging the level of their creative powers revealed the insufficient development of creative mindset, problem-solving skills and professional competence. The masters do not have the skills necessary to work out innovative projects and models, nor are they prepared to implement and effectuate them within their prospective professional environment.

An integral element of the professional upbringing of prospective teachers for innovative educational activity is a step-by-step approach to practical and theoretical knowledge acquisition. This was the groundwork for the MA course for majors in “Pedagogical education” under the title of “Teacher preparation for innovative professional practices” with such vocational subject components as “Contemporary issues of education and science”, “Innovative processes in education”, “Innovation theory”, “Innovative educational techniques”, “Designing educational environments within the framework of federal educational standards”, “Interactive forms and methods of teaching in educational institutions”, “Information technologies in professional activities”, “Innovative approaches in inclusive education”, “Educational institutions as the object of innovative technologies”.

The contextual framework of these disciplines allows to conceptualize the peculiarities of innovative educational processes, to become proficient in innovative professional techniques, acquire the skillset to use innovative forms and methods of teaching together with the aptitude to implement innovative professional practices. Within the framework of our teaching resource, we maintained a didactic balance between the contextual and procedural aspects of learning, the entity of the productive and reproductive cognitive activities, teaching and self-education, development, and self-improvement. This provided the postgrad students with the following activity opportunities:

- cognitive and perceptual activities stimulated the formation of the following skills necessary for the prospective teachers: observation skills, imaginative powers, attentiveness, creative and analytical thinking;
- reproductive activities ensured knowledge acquisition and consolidation, rationalizing work techniques, “following the example”, success in some creative activities;

- competence-based activities encouraged the students to resort to individual creative and intellectual work, forming critical thinking skills of problem areas with the help of system approach skills of designing pedagogical activity based on scientific research data and both plan and organize the educational ties and relationship;
- scientific research enabled the masters' to express their individual professional skills and creative abilities by solving challenging research problems.

To ensure learning efficiency it was expedient to use various forms of teaching. We placed essential importance on active and interactive forms, facilitating masters' aptitude formation for innovative practices. Student conferences, colloquiums, consultations, training sessions and workshops, brainstorming, business games, case studies, interactive games, project work and practice sessions demonstrated the most promising results.

A significant condition of successful application of the said forms of the educational process is their integration and fulfillment of set aims and functions corresponding to the above-mentioned types of student activities.

Active methods of teaching were based on the equally active involvement and conscious effort of every subject. This concept reflected the dynamics of self-improvement and personal transformation. The given experimental research intertwined every subject's personal choices with their level of activity which influenced the overall productivity. Thus every master relied on the active wish to expand existing opportunities and skills in innovation activities rather than simply re-enact previous experiences. The active learning approach and interactive forms of teaching allowed certain alterations in the designated teacher-mentor role and promoted the shift in teacher-student interactions to enhance the overall productivity of mental work.

During the conducted experimental research the primary focus was shifted to the techniques of problem-based learning the basics of which implied student interaction with problem areas of teaching materials projected by the teacher as a system of problems reflecting the existing contradictions between theory and practice. The learning process in this case implied dialogue. Masters' cognitive activity included problem area analysis and formulation, additional research, hypothesis emergence, formulation, cross-checking and validation, followed by knowledge acquisition, the transformation of the problem into a practical task, examination, and solving of the task with the justification of the proposed solution.

The project work technology aimed at forming analytical and creative thinking skills, information assessment, and contextual structuralizing as well as case formation abilities.

Students' immersion into the process of mastering innovative activity was an integral part of the experimental stage of this study. Thus, we used training sessions as a multi-functional method of student integration and formation of the necessary skillset. Within the framework of training sessions, we applied a number of systems: complex operating system enabling the students to tackle several operations simultaneously, followed by problem-solving with the same toolset; then the loop continues with the tasks at hand requiring the use of both newly and previously employed operations; objective-technological system or, in essence, fundamental and comprehensive study of any techniques, methods, and tools applied in innovative professional practices, on a "simple to complex basis"; an analytical or problem-oriented system which requires energetic mental activity due to instances in professional-pedagogical activity when self-sufficient decisions are needed. Following the designated tasks the following training session elements were distinguished: functional (perfecting memorizing and attention skills and certain innovative activities reciprocity; perceptive (contributed to the adequacy of image perception, scrutinized objects, algorithms, and corresponding operations); intellectual (facilitated mental processes integral for decision-making in various conditions, based on creative thinking skills as well); special skills component (promoted confidence and self-assertiveness, as well as teamwork and joint decision-making skills).

The said training session components were implemented in both student group meetings and individual sessions.

Project work contributed to the masters' preparation for the innovative practices routine. Projects included teamwork and individual participation. In the process, the students acquired the following skills: to find and analyze interesting innovation activities, research the implementation conditions, implement innovative practices and estimate the results as well as professionally evaluate the effectiveness and worth of the innovations.

Practical activities in educational institutions provide undeniable contributions to professional innovation activity. When organizing practice sessions we formulated the following tasks and requirements:

- 1) Practice sessions are to be conducted at educational institutions that implement innovative processes and state-of-the-art learning and upbringing techniques.
- 2) During sessions the master's degree students need to be familiarized with specifications and peculiarities of innovations within the educational process employed by the institution.

- 3) All assignments are to be based on project work and case study methods promoting creativity and self-sufficiency in all students in real conditions of their prospective employment field.
- 4) All assignments and activities are to be aimed at practical problem-solving and the facilitation of innovative and creative approaches towards the professional occupation.

During the control stage of our experimental research we assessed the students; aptitude for professional innovative activities in educational institutions.

The aptitude criteria were manifested by systemic levels of knowledge formation facilitating the professional innovative activity. As denominators we chose the following knowledge indicators:

- contents and concepts of innovation activities and processes, their patterns, principles, and subjects;
- methods of information research and analysis, the ways to use it and build relationship ties in a given group of people, peculiarities of project work and implementation of professional innovation practices;
- implementation techniques of the innovation process, reflection, correction, and result evaluation procedures as well as the groundwork for the experimental research.

Skills:

- information analysis skills;
- prognostic and project work;
- organizational and pro-active skills;
- reflective and correction skills.

Competences:

- the ability to develop an independent creative and intellectual activity of prospective educators;
- a critical assessment of problem areas based on system approach;

- design of pedagogical activities based on specific scientific data and research results;
- planning and organizing of interaction skills among all participants in educational relationships.

The students' questionnaire included the question: "In what way has your completion of the course "Teacher preparation for the innovative professional practices" influenced your approach towards the components of the professional innovation activities?" The answer sheet contained more than 20 possible responses to choose from.

The subjects were allowed to choose several as well as one. The analysis of the results showed that 77% of recipients believe that this particular course allowed them to analyze their capabilities and abilities; 88,1% stipulate that the introduction to the components of professional innovative practices helped them to review their attitude towards their occupational choice and re-evaluate their professional interests; 64,3 % masters' noted that the introduction to the course will enable them to develop their professional skills; 78% of participants pointed out that they looked on their prospective occupation with fresh eyes; 80,1% shared that they expanded their skillset; 43 % expressed their intent to work as professional educators.

This data validates the point that the elements and the innovative organization of the educational process in any institution of higher education promote both professional and personal growth and the emergence of prospective educators.

We attempted to find out how well the students comprehend the necessity of innovative educational activity.

Response analysis indicated that the masters are fully aware of the present state of social and cultural affairs, are familiar with reforms and modernization processes at work in the education system in the last several years: 82% of recipients prioritized the transition towards stable innovative development of the education system, aimed at achieving the results set by world standards, and creating a system of continuous quality improvement and competitive high-class performance of the Russian system of education.

The aptitude for professional innovation activity consists of theoretical and practical aptitudes. Thus it was crucial to determine:

- the alteration in masters' creative thinking levels;
- the assessment of creative activity aptitude;

- project work skills level formation.

We assumed that interactive and active methods of teaching would facilitate the formation of the following skills among all subjects: creative abilities, consistency of thinking, self-improvement abilities, reflective skills and understanding of the way one's mind works.

The given research provided certain assignments during its initial and final stages. The parameters for the analysis remained unchanged which allowed to assess the developments in thought dynamics of the students. The results achieved during the control stage manifest that the underlined indicators improved throughout the research.

The experiment included assignments on the productive, heuristic and creative thinking levels. Productive level proposed activities connected with research for new types of action, heuristic required relying on one's wit to get out of a problematic situation, and creative thinking implied independent problem identification and solving.

67% of the master's degree students completed the tasks on the productive level, the heuristic one was completed by 46%, and the creative was conquered by 40% of subjects.

The results show that the students need to be prepared for creative activity and we believe that in this case both project work and training sessions suit the conditions perfectly. During the assessment of projects, we took into consideration the following: attempts to gain more knowledge, confidence in judgment, the ability to stand one's ground, level of self-sufficiency and personal initiative, work enthusiasm and professional satisfaction. There were three criteria levels: low, medium and high. The accumulated data states that the majority of indicators adhere to medium and high criteria levels. This brings us to the conclusion that the active teaching methods applied during research as well as the components and project work stimulate and motivate creative and self-sufficient activities, benefit creative growth among the students and improve personal attitudes towards project work during the final control stages of the experiment.

In conclusion, the masters were offered to evaluate their aptitude for the implementation of innovative professional activity. In order to do that all subjects needed to fill in the self-evaluation form, answering the question: "Are you ready to implement innovative practices in educational institutions?" The response offered were: "definitely ready", "probably ready", "it's hard to say", "probably not ready" and "definitely not ready".

The response analysis determined that 48% of subjects were “definitely ready” for innovative activities, 27% recipients claimed that they were “probably ready”, 15% of students chose “it’s hard to say” response, 6% of participants answered of “probably not ready” with 4% stating that they were “definitely not ready” for professional innovation activity. Thus the research indicated that for the master’s degree students’ preparation for the innovative professional activity the following conditions are required:

- the formation of positive motivation among postgrad students for innovative professional activities, the development of creative thinking and creative powers to implement innovative forms and methods in educational activities; the formation of knowledge of innovative processes in the education system and the main components of innovative activity; mastering the innovation activity experience by prospective educators. The study showed that the projected model should be based on the pragmatic approach to the process of knowledge assimilation, on the systematic approach; on the principle of developing learning, contributing to the development of students’ personality, first of all, the said students’ intellectual abilities.

Discussions

The conducted study is one of the few dedicated to the preparation of MA students for innovative professional practices researching the issues and aspects of pedagogical conditions, components and aptitude techniques in institutions of higher education.

In the course of the study, we determined that the concepts of “novation”, “innovation”, “innovative process” and “innovative activity” are somewhat ambiguously defined. National research identifies “innovation” as the result of innovative activity, while our overseas colleagues view it as a process of alterations, or just a process.

The research of the concept of “aptitude for professional innovative activities” enabled us to give an authorized definition: we consider it as evidence of the maturity of the person’s individual and professional potential, providing the said person with intellectual and professional self-realization skillset in the fluctuating social environmental conditions.

The conditions being a crucial component of the students’ effective preparation for the innovative professional activity we outlined the following psychological and pedagogical terms:

- the formation of positive motivation among the subjects for innovative professional practices;
- the development of the students’ creative thinking and creative abilities to implement innovative forms and methods in educational activities;

- the formation of knowledge of innovative processes in the education system and the main components of innovative activity;
- mastering the innovation activity experience by prospective specialists.

Our study determined the necessity of incorporating into the educational routine a number of modules to ensure the acquisition of a proper skillset, such as “Innovation theory”, “Innovative educational techniques”, “Interactive forms and methods of teaching” “Innovative approaches in inclusive education” etc.

Another valid factor of successful professional training of students for the innovative activity is proper organization and personal involvement of every subject in diverse educational activities as well as using active and interactive forms and methods of teaching.

Applying project work, case studies and training techniques contributed to the immersion of postgrad students into the learning acquisition process of innovative professional practices.

The implementation of the said practices is beneficial to all educational institutions bringing forth innovation processes and their structural components are to be implemented in a proper manner.

The experimental research provided us with important statistical findings, validating the effectiveness and practical value of our preparation course for the MA students majoring in “Pedagogical education” enabling them for innovative professional activity.

Conclusion

The research of pedagogical and psychological literature showed that such fundamental notions as “innovation”, “innovative process” and “innovative activity” are used most commonly. While national researchers consider “innovation” as a product of the activity, overseas theories claim it to be a change-implying process or the activity itself. We note that in innovative activity a person acquires the opportunity to manifest one’s individual abilities and capabilities, as well as personal emergence and improvement. In this regard, we consider the aptitude for innovative professional activity as evidence of the maturity of the person’s individual and professional potential, providing the said person with intellectual and professional self-realization skillset in the fluctuating social environmental conditions.

The present-day higher education system aims at presenting a new type of teaching staff, open to innovative techniques, implies an on-going search for effective ways and methods of educating prospective specialists on diverse educational levels.

The transition towards multi-level education system ought to solve the following problems at the masters' level:

- to carry out practice-oriented training of highly qualified staff for particular fields of scientific and practical work ;
- to provide specialized training for a scientific and pedagogical staff capable of working at innovative, evolving and developing schools.

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