

Experience of Testing Practice-Oriented Educational Model of Pedagogical Master's Program

Tatjana I. Shukshina^a, Irina B. Buyanova^a, Svetlana N. Gorshenina^a, Irina A. Neyasova^a

^aMordovian State Pedagogical Institute named after M. E. Evseviev, RUSSIA

ABSTRACT

The recent changes in the Russian educational regulations have predetermined the search for new conceptual approaches and ways to improve the content and arrangement of pedagogical staff training. More attention is paid to the implementation of the professional standard of a teacher intended to set the etalon of a graduate of a pedagogical higher school, to identify the criteria for the assessment of pedagogues' qualification, to create the basis for their job descriptions and payment system. It is required to check the compliance of the professional standard of a teacher with the current national governmental standards for higher education. The Ministry of Education and Science of the Russian Federation in 2014 began the project for the modernization of pedagogical education with the objective to ensure efficient and good quality educational process aimed to train contemporary pedagogues. In compliance with that project, the modernization of pedagogical education is focused on the development of new models of educational programs for training pedagogues compliant with the global trends of pedagogical professionalization. The objective of this paper is to share the experience of testing a practice-oriented model for training pedagogues within pedagogical master's program. The main method is pedagogical experiment enabling to find the basics of the content and process of pedagogues training, to identify the set of means, methods and conditions of that process arrangement ensuring efficient establishment of professional competences and professional acts of a pedagogue in total constituting the basis of his/her qualification. Independent assessment results on the establishment of professional competences and acts of future pedagogues were submitted. The materials of this paper are of interest for scholars, masters, pedagogues

KEYWORDS

master's program in pedagogics, practice-oriented training, educational unit, network cooperation, professional competences, professional acts.

ARTICLE HISTORY Received 15 May 2016 Revised 20 July 2016 Accepted 19 August 2016

1. Introduction

In the contemporary conditions, training teachers in compliance with the requirements of national standards of higher education and professional standard

CORRESPONDENCE

Irina B. Buyanova

 \sim

Email: ibbuyanova@yandex.ru

© 2016 The Author(s). Open Access terms of the Creative Commons Attribution 4.0International License (http://creativecommons.org/licenses/by/4.0/) apply. The license permits unrestricted use, distribution, and reproduction in any medium, on the condition that users give exact credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if they made any changes.

of teacher is becoming crucial for the future of the Russian school. In that connection, it is required to develop optimal programs for practice-oriented training of pedagogues within master's programs aimed to achieve new education results enabling to learn professional competences and functions. The solution of this task mostly matches the development of a practice-oriented model of a pedagogical training educational program (Margolis, 2015).

Within a project on the modernization of pedagogical education initiated by the Ministry of Science and Education of the Russian Federation in 2014, in compliance with the Resolution of the Coordination Council of the Network Union of Higher Schools Pedagogical Staff of Russia dated December 22, 2014, the Mordovian State Pedagogical Institute named after M.E. Evseviev joined the Union and is a co-executing higher school together with the Moscow State Pedagogical University on F-135.056 project Development and introduction of new units for the basic educational master's professional/pedagogical program for aggregated groups of majors Education and pedagogics in Psychological and pedagogical education (Prep school teacher) based on the network cooperation of educational institutions implementing higher and general education programs suggesting advanced profession-oriented practice for students. The basic objective of the implementation of this project is ensuring efficient and good quality educational process aimed to train a contemporary pedagogue, to establish variable training trajectories (in pedagogical higher schools, classic universities, by retraining adjacent areas professionals) for those ready to pedagogical activity in education, culture, social sphere.

In compliance with terms and conditions of the implementation of the project, the practice-oriented model of pedagogical master's program is tested in higher schools realizing professionalization of future pedagogues ready to develop their professional activities in compliance with the professional standard (Shukshina et al., 2015).

2. Methods

2.1 Methodology of research

The methodological basis of this research in testing the practice-oriented model of pedagogical master's program is activity-based approach which provides the logic of establishment of the qualification requirements to future pedagogues upon the analysis of a respective sphere of professional activity of graduates, establishment of respective qualification characteristics and professionally important qualities, selection of the educational content ensuring establishment of respective qualification characteristics (Margolis, 2014). The implementation of the ideas of activity-based approach allows to shift the accent from a teacher and the content of a subject to the student of a master's program and expected education results.

2.2. Methods of research

To solve the research objectives within the project, the following methods were used: forecast, design, pedagogical experiment, praximetric methods (analysis of products of vital activity, projective methodologies), observation, expert assessment, control and measure tool to assess professional competences (tests, cases, competence-oriented tasks of various levels).

2.3. Experimental basis of research

The experimental basis of research was the Mordovian State Pedagogical Institute named after M. E. Evseviev. The experiment was attended by

pedagogical master's program students. The experiment was held in 2014-2015 academic year.

2.4. Stages of research

The research comprised three stages:

- at the preparatory stage, the contemporary situation of the research issue in pedagogical theory and practice was studied; program and assessment tools were developed for the establishment of professional competences and acts of future pedagogues;
- at the basic stage, the model of practice-oriented training in pedagogical master's program was introduced; practical experiment was made to check the efficiency of the model; independent assessment of establishment of professional competences and acts of future pedagogues was made;
- at the final stage, systemizing and generalizing of research results were made; theoretical conclusions were specified; research results were processed and made out.

3. Results

3.1. Structure and content of the model

The model of practice-oriented training in pedagogical master's program tested within pedagogical education modernization project is a guarantee for the implementation of the competence/activity principle as it ensures gaining professional experience via learning professional functions and acts specified in the professional standard of a teacher (2014) and understanding of knowledge, development of skills and establishment of competences set forth by the federal state educational standard for higher education (2014).

The studied model of educational pedagogical master's program is structured by units. An educational unit is a complex theoretical/practical one aimed to establish a certain set of professional acts compliant with the professional standard of a teacher. The academic content of each educational unit depending on the designation and place in the basic professional educational program includes the theoretical disciplines and their sections which in total ensure the opportunity to establish the required knowledge, skills and professional acts in students in connection with the implementation of a certain professional function of a future teacher. Besides, each unit provides for the practical component of teacher's training in a specific laboratory and learning environment (practicum) and on clinical basis (in educational institutions) (Buyanova, 2015).

According to the requirements on modernization of basic educational teachers training programs, the stages for learning educational units are identified: 1) educational/learning practice, 2) theory, 3) teaching practice, 4) scientific and research work, 5) theoretical reflection (Margolis, 2014).

Within the framework of the implementation of the project in academic year 2014–2015 we tested the units Individualization and differentiation of teaching and training with various categories of children and Design and scenarios of developing knowledge in prep school within educational pedagogical master's program developed by a group of teachers of the Moscow State Pedagogical University.

3.2. Process aspects of model testing

Testing the units of the educational program suggested for using students' learning activities like lectures and practical studies, self-guided work in Infomedia, practices, observations, laboratory and analytical work, preparing and implementation of projects, schools-based research, ensuring the achievement of new educational results.

Learning professional functions and acts was arranged via new practiceoriented forms of teaching: electronic portfolio, project activity, business games, schools-based research, case studies, competence-oriented tasks of various levels, cooperation in Infomedia. The practical work (practicums, practices) was based on learning professional functions and acts of future teachers via new forms of practical training arrangement like study of advanced experience and innovative activity of teachers, cooperation with social services, creating electronic products.

3.3. Implementation of advanced profession-oriented practice of master's program students in the course of testing the model

We included a great deal of practice in the educational unit which was caused by the need to put the task of doing professional acts and further arrangement of psychological and pedagogical research aimed to analyze the reasons and problems in the implementation of a professional act.

Following the logic of the structural scheme of an educational unit, the teaching process started with educational/learning practice (integrated), not interrupting the studies in higher school. The basic objective of that practice within educational units was the establishment of the conditions to create motivational and professional aspects of teaching, learning the problematic of the disciplines of the unit in real conditions of the educational institution, ensuring the prospects for studying and learning the knowledge, skills and experience, included in the unit, actualization of the range of professional acts required for the teaching activity. Teaching (pedagogical) practice in compliance with the structure of the unit and curriculum schedule was done upon the completion of studying the disciplines of the unit. The main target message of the practice was in connection with the creation of conditions to establish professional acts and competences in master's program students, learning the required professional experience, enabling future teachers to show their readiness to work within the contemporary qualification requirements to prep school teachers' activity.

Within practice periods, students were involved in practical activities consequently and step by step. Conceptually, it was implemented via the solution of a number of practical tasks: design of individual practice plan; implementation of scheduled activities in compliance with practical goals and tasks; analysis and submission of practice results. The practical training of future teachers during practice periods suggested for doing various problem tasks, analysis of individual psychological and pedagogical situations, study of complex cases in intervisor groups and via supervision, monitoring of supervising teacher's work, individual professional trials, implementation of teaching techniques used in prep school teacher's work. Students trained not only to do certain tasks in connection with implementation of some professional acts but also tried to independently set goals and identify their professional tasks, choosing adequate methods for their implementation. The practical activity within practice periods included project forms of work, doing which students were able to overcome some fragmentation, to see teacher's work in an interactive way. Group analysis of the project work

allowed future teachers to identify the professional acts insufficiently established in them at that stage.

3.4. Arrangement of network cooperation within model's testing

Testing of the practice-oriented model of pedagogical master's program suggested for the arrangement of network cooperation oriented at various level system of higher school – high school relationships (Shukshina et al., 2015). In that connection, special attention was paid to the choice of testing grounds – Grammar school No. 19 of Saransk city was selected. The choice of the testing grounds accounted for the following provisions:

- availability of a certain educational model;
- professional staffing level in that educational institution;
- favorable psychological climate in a group;
- high level of facilities;
- various categories of students;
- basic department of pedagogical techniques empowered to follow students in the course of professional practice.

The network cooperation forms enabling to use the resources of educational institutions were a significant advantage in practice-oriented training of future teachers.

As the basis for network cooperation between a higher education institution and an educational organization, the idea of building a multi-position system of relationships between educational process parties has been used:

- higher education teachers school teachers and pedagogues (supervisors);
- supervisors higher school students;
- students prep school pupils;
- prep school pupils (and their parents) higher school teachers.

The above relationships were built within the logic of productive mutual enrichment. In that connection, the mechanism of network cooperation enabled each party to demonstrate initiative and independence, expose and realize personal potential, exchange available information and resource-related opportunities.

Among the innovative forms of cooperation, working of students, supervisors, higher education tutors in the information environment ensuring network cooperation of educational process parties should be specified. The information environment (Infomedia, or virtual campus of Mordovian SPI) was used to arrange professional communication and reflection. In the personal information space, students were able to reflect the plan, course and results of their practices (educational products, self-analysis, analytical reports). Open access to that space for parties – higher school tutors, supervisors, students – allowed to discuss the emerging problems at the forum, to comment, to review the work. Thanks to Infomedia, the differential experience obtained by students at school becomes available for other network cooperation parties. An important advantage of such arrangement is the ability to realize reflection and assessment procedures: when a student's activity in practice may be assessed not only by practice tutors but by other students.

One of the conditions for efficient cooperation is the separation of duties and powers between higher school teachers and supervisors. A supervisor's role in network cooperation is in identifying professional acts learnt by master's program students while studying the disciplines of the unit and referring them to professional experience obtained based on establishing practical skills included in competences. A supervisor's duties include the following: getting students acquainted with the educational institution; assisting students in joining the professional community; showing the etalon of professional acts; assisting students in individual planning of professional acts; control of professional acts done by master's program students and further discussion of results; taking part in the assessment of the learning level results of students while the object of independent assessment is students' activity during practice periods and their educational products.

As a result of the suggested system for practical training within network cooperation, the professional chain to solve a concrete problem was created: teacher – supervisor – student – concrete result.

3.5. Experimental efficiency check of the tested model

Due to the changing requirements to the educational results in the format of competences, related to professional functions and acts, new mechanisms were developed to assess the level of established educational results of the basic professional educational program and its units.

For operational and regular control over master's program students teaching activity (including independent) we applied current control on the discipline level. That kind of control is traditionally oriented to check the learning of theoretical and practical materials regularly done within the whole period of studying a particular subject. Assessment tasks for current control were submitted in various forms: tests, questionnaires for interview, inspection tests in writing, case studies and other competence tasks of various levels. The solution of such practice-oriented tasks evidences the level of the influence of the study process on the establishment of general cultural and professional competences in students in compliance with the requirements of the federal state standard for higher education.

3.6. Procedure of assessment of professional competences in master's program students

The procedures for measuring the educational results were designed based on interdisciplinary and inter-unit approaches. Developers, executors and co-executors of projects adopted multilevel model for assessment of establishment of professional acts which makes it principally different from the invariant one used within the traditional approach.

For creating the required fund of assessment, multilevel model of pedagogical measuring tools was used divided in two interrelated units. With the orientation to this model, the first unit was represented by tasks on know level with the obvious type of solutions learnt by students during studying the disciplines of the unit, while the tasks of this unit were aimed to identify mainly knowledge component by disciplines and were assessed by binary scale right/wrong.

The second unit was represented by tasks on know and be able levels containing no reference to the method of implementation, and students could choose any of them on their own. The tasks of this unit allowed to assess not only

knowledge by disciplines but also the abilities to use it while solving standard typical tasks. Results of tasks fulfillment in this unit were assessed accounting for the tasks correctly fulfilled. For that purpose, various case measurements were developed containing real practical situation and set of questions in connection with it. Fulfillment of case tasks by students required solutions of the problem/situation in general and the ability to analyze certain information, monitoring causal relationships, specifying core problems and solution methods.

To assess the level of competences establishment, a supervisor was called as an independent expert appointed by the educational institution — partner for network cooperation. The object of independent assessment was also students' activities within practice period and educational products created.

3.7. Stages of assessment of professional competences establishment in master's program students

The assessment of results of professional competences establishment was done during intermediate attesting upon completion of the study of the unit, during the final (finishing) control of a discipline and at the final attesting by units.

Intermediary attesting allowed to assess larger aggregates of knowledge and skills and establishment of certain professional competences. Such control served as the main means of ensuring feedback in the educational process between teacher and students, required for stimulation of works of the latter and improvement of teaching disciplines methodology. That control and assessment was accountable when putting term marks on disciplines. At the intermediary assessment stage, such assessment means as competence-oriented various level tasks were used (analysis of educational process in various educational systems; writing joint generalizing essays by the Wiki technology), preparing educational products (video fragments of classes), making recommendations. Besides, the assessment means included the topics of term research projects, term papers, structure and content of portfolio on each discipline/unit. To assess the level of competences establishment at that stage, electronic portfolio was also used (personal pages in Infomedia – Virtual campus of MordSPI). Portfolio structure comprised the following components: my profile (biography, professional interests), personal and general documents (references, list of information resources and electronic databases, working files, results of fulfilled tasks, educational products, self-analysis of activity's results, reports of practice supervisors, employers, etc.). Portfolio was filled as tasks were being done.

The final control of a discipline served to check the results of the students' acquisition of the content of the program of a certain discipline. For that purpose, tasks on implementation of students' project activity were used, with passing exams and exams containing learning and professional tasks along with traditional theoretical questions as assessment tools.

The assessment of preliminary results of competence establishment allowed to identify the domination of the knowledge-related level. 60% of students showed high level of theoretical knowledge in the unit of the disciplines. Preliminary results of practice let us to identify high executive level of competences establishment in 40% of students (compliance with disciplines and practices).

The final attesting by units upon the basic testing stage was aimed to check for inspection of professional acts established in the course of studying the disciplines of the curriculum of the first and second terms.

3.8. Results of assessment of professional competences establishment in master's program students

We will now see the results of testing students who showed non-establishment of the professional act 56 (adjustment of teaching activity based on educational results monitoring accounting for uneven individual psychological development of younger children including due to differences in age, prep school conditions and specifics of dynamics in boys and girls) (Table 1). A professional act is deemed established if at least 60% of students attending the tests were able to establish a professional act.

Table 1. Assessment of the efficiency of mastering the professional acts of the project

ID of professional act	9	30	33	51	56
Threshold value	60	60	60	60	60
Result	83	67	90	60	20

The result obtained is rather regular and expected due to a few reasons: first, students in their reflection reports showed that this professional act is at the stage of establishment and according to the basic educational program should be formed as the result of units 3, 4, 5; second, an important part in learning that professional act is played by methodology and professional trying which could not be done in the second term compliant with the basic educational program; procedures to measure educational results (tests and cases) were testing the professional tasks which students were not ready to yet.

The procedure of monitoring educational results was complicated by the fact that despite professional acts and competences established within a unit had already been identified in the matrix, if a unit is realized within a few terms, matrixes of professional acts and competences by terms and not only by units are required to arrange better quality monitoring.

The results of learning the units of the basic educational program are summarized in Table 2, where: 0 level means that some components of any professional activity were not learnt or were insufficiently learnt; reproductive level shows that a student learnt some components of professional acts; productive level evidences that a student learnt the principle of professional acts in general; constructive level means that a student used a professional act in new conditions.

Table 2 – Results of units learning within the basic educational pedagogical master's program.

Levels of units learning results	Results of unit learning by levels, %				
learning results		Unit 3	Unit 4		
	Professio- nal standard	Federal state educational standard of	Professio- nal standard	Federal state educational standard of higher education 3+	

		higher education 3+		
0 level	10	0	12	5
1 level (reproductive)	36	37	28	30
2 level (productive)	49	55	56	58
3 level (constructive)	5	8	4	7

From the table it is seen that the positive dynamics in learning units are present but learning professional acts is slower than that of competences provided for by the federal state standard of higher education (master's level).

Testing of the new attesting procedure and the results obtained evidence the prospects of such a form enabling to obtain an expert assessment of establishment of certain competences and professional acts.

4. Discussions

The studied issue is reflected in works by contemporary Russian and foreign researchers. The scholars study the principles of building a professional teacher's career (Shukshina and Babushkina, 2014; Buyanova, 2013; Zabrodin et al., 2015), describe optimal models for teachers training (Margolis, 2014, 2015; Zeichner and Conklin, 2005; Musset, 2010), study the issues of teacher training within network cooperation of educational institutions (Adamski, 2004; Kadakin and Shukshina, 2015; Kondrakova, 2014), cover on the influence of pedagogical education content on the quality of training students (Angrist and Lavy, 2001; David, 2002; Nistor et al., 2013; Wayne and Youngs, 2003; Wilson et al., 2002; Yakunchev and Gorshenina, 2013; Neyasova, 2015). Despite the relevance of this issue, the attempts to solve it are of fragmental nature which enables the authors to submit their experience in testing the model of practice-oriented program accounting for the conditions of specific environment of a higher school which has not been a subject of research so far.

5. Conclusion

The practice-oriented model in the context of the modernization of pedagogical education was aimed to ensure the professionalization of teacher training within pedagogical master's program. Innovative approaches to curriculum arrangement contributed to the establishment of professional pedagogical competence of future teachers and mastering their professional skills via understanding, structuring, design and use of professional pedagogical experience in action, establishment of research competences, ability for reflection and individual professional development opportunity after graduating. The achievement of positive results in professional training of future teachers within tests was ensured by the following: interactivity, creating dialogues of the learning/training process within network cooperation with educational institutions aimed to create subject-subject relationships for a student, a supervising teacher, a higher education teacher ensuring self-actualization and self-presentation of a student's personality; arrangement of advanced professionally oriented practice based on the implementation of unit approach ideas within network cooperation; testing new attesting procedure. The implemented areas of professional activity within testing of practice-oriented model for master's program education evidence the improvement of practical training of future teachers and the prospects of the studied issue regarding the enhancement of organizational, contextual, methodological and professional matters under pedagogical master's program, improvement of practice-oriented training content, conditions for scientific and pedagogical experiments to be done by master's program students.

Acknowledgments

This paper was prepared with the support of the Ministry of Education and Science of the RF within the Governmental task to the Mordovian State Pedagogical Institute named after M.E. Evseviev for 2015. Project No. 1846 "Theoretical and methodological basics for the development of the model of a higher school as the basic center for pedagogical education".

Disclosure statement

No potential conflict of interest was reported by the authors.

References

- Adamski, A.I. Network Partnership in Education. Moscow, Eureka, 2004. 144 p.
- Angrist, J. and V. Lavy (2001). Does Teacher Training Affect Pupil Learning? Evidence from Matched Comparisons in Jerusalem Public Schools, Journal of Labor Economics, 19 (2), 343-369.
- Buyanova, I. B. (2013). Analysis of the level of students' adaptation to the university environment, Middle East Journal of Scientific Research, 17 (9), 1237-1242.
- Buyanova, I. B. (2015). Modular approach to construction of basic professional educational programs of teacher training in accordance with the professional standard of the teacher, Humanities and education, 3 (23), 81-85.
- David C. (2002). Berliner The Effectiveness of "Teach for America" and Other Under-certified Teachers on 16 Student Academic Achievement: A Case of Harmful Public Policy. Arizona State University, Educational Policy Analysis Archive, 16 (6).
- Federal state educational standard of higher professional education on a direction of preparation 44.04.01 (2014) Pedagogical education "Master's degree". http://mag.sseu.ru/index.php?option=com_content&view=article&id=14:050100fgos&catid=6:201 1-05-16-21-39-24.
- Kadakin, V.V., Shukshina, T.I. (2015) The training of teachers in terms of network interaction of educational institutions, Humanities and education, 3 (23), 93-98.
- Kondrakova, I.E. (2013). Networking: mechanisms for the implementation of educational policy, Universum: Bulletin of the Herzen University, 3, 29-32.
- Margolis, A.A. (2015) Teacher Training Models in Applied Bachelor and Pedagogical Master Programs Psychological science and education, 20, 5, 45-64.
- Margolis, A.A. (2014). The Requirements for the Modernization of Basic Professional Education Program (BPEP) of Teachers Training in Accordance with the Professional Standard of the Teacher: Proposals for the Implementation of the Activity Approach in Teachers Training, Psychological science and education, 19, #3, 105-126.
- Musset, P. (2010). Initial Teacher Education and Continuing Training Policies in a Comparative Perspective: Current Practices in OECD Countries and a Literature Review on Potential Effects, OECD Education Working Papers, 48, OECD Publishing. http://dx.doi.org/10.1787/5kmbphh7s47h-en.
- Neyasova, I.A. (2015). Establishment of readiness to socio=-pedagogical activity, Contemporary issues of science and education, 5. http://www.science-education.ru/128-21885.

- Nistor, N., A. Gogus and Lerche T. (2013). Educational technology acceptance across national and professional cultures: a European study. Etr&d-educational technology research and development, 61(4), 733-749.
- Professional Standard of "Teacher (Teaching Activities in Preschool, Primary General, Basic General, Secondary General Education)" (2014). http://www.rosmintrud.ru/docs/mintrud/orders/129.
- Shukshina, T.I., Babushkina, L.Y. (2014). Formation of sociocultural competence among students of a pedagogical higher education institution using ICT when learning foreign languages, Life Science Journal, 11(6), 565-568. http://www.lifesciencesite.com.
- Shukshina, T.I., Buyanova, I. B., Gorshenina, S.N. (2015). Practice-oriented training of masters in terms of the networking of educational organization, Humanities and education, 2 (22), 79-85.
- Wayne, A. J., & Youngs, P. (2003). Teacher characteristics and student achievement gains: A review. Review of Educational Research, 73(1), 89-122.
- Wilson, S., Floden, R. and Ferrini-Mundy, J. (2002), Teacher preparation research: Current knowledge, gaps and recommendations. Center for the Study of Teaching and Policy, University of Washington.
- Yakunchev, M., Gorshenina, S. (2013) Diagnostics of Ethno-Cultural Competence of the Future Teachers // Middle-East Journal of Scientific Research 16 (12), 1709-1713. http://www.idosi.org/mejsr/mejsr16%2812%2913/17.pdf.
- Zabrodin, Yu. M., Sergomanov P. A., Gayazova L. A., Leonova O. I. (2015). Development of the differentiation system of skill levels in teaching professional standards. Psikhologicheskaya nauka i obrazovanie = Psychological Science and Education, 20, 5, 65-76.
- Zeichner, K.M. and Conklin, H.G. (2005), Teacher education programmes. In M. Cochran-Smith & K.M. Zeicher (Eds.), Studying teacher education: The report of the AERA Panel on Research and Teacher Education, pp. 645-735. Washington DC: AERA; Mahwah, NJ: Lawrence Erlbaum.