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The Development of 'Project Competence' of Future Teachers

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Abstract

The essential characteristics and a structure of project competence of future teachers are revealed in the article. The authors notice that, to put into practice projection, that is, to have a project competence, certain skills such as analytical, gnostic, research, diagnostic, creative and reflective skills should be developed in a future teacher. Since project skills require a combination with other specific narrow methodological skills, the authors have carried to them also reflective, research, the ability to find multiple problem solutions, group, management, presentation and communication skills.

Keywords: future teacher, educational projection, project competence, skills.

Introduction

An analysis of scientific literature shows that the successful achievement of goals and further professional activity of future teacher is impossible without a high level of development of project competence, which is the basis of methodical competence, so as to perform professional activity, a teacher has to project his actions constantly, possess techniques of professional project thinking such as planning, analysis, prognostics, modelling etc.

We believe that the nature of competence is that it is a product of education; a consequence of human self-development, his personal growth, a consequence of self-organization and generalization of a personal and working experience.

To identify the main characteristics of a future teacher's project competence, it is necessary to examine a number of scientific concepts that will help to reveal the essence and specificity of this phenomenon.

Definition of the Essence of the Concept – "Projection"

In modern conditions, future teacher's professionalism is determined by his ability to diagnose, model the educational process, i.e. to possess of a project competence in modelling lessons, extracurricular activities, academic programs, independent extracurricular activities etc.

Let us analyze the categories that are the key in preparing future teachers to realization of the project competence. The central concepts of the scrutinizing problem is a "project", "projection", "project skills", the correlation of the concepts "projection", "prognostics", "modelling" and "skill".

In the V. Dal's defining dictionary to project is to plan, to think, ..., to predict to perform, to compose a note for this" (Dal, 1980: 148). L. Stoliarenko defines pedagogical projection as one of any teacher's functions that is no less significant than the organizing, gnostic or communicative

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functions (Stoljarenko, 2000: 61). I. Pidlasyi considers projection (planning) as "the last stage of preparation to the lesson that ends with the creation of a programme of the management of the students' cognitive activity" (Podlasyj, 1999: 534).

Other scientists say that the projection is a very important stage in the preparations to the use of specific pedagogical ideas in the real pedagogical process. Therefore it is important to create a specific technology that will help a future teacher to project the students' educational process (Zhernovnykova, 2015).

In modern pedagogy the concept "projection" is regarded as orientation to the future (without taking into account the past), ideal rethinking and the practical implementation of that what is possible, and what should be; one of the ways of innovative activity that use a socio-cultural mechanisms of construction and reconstruction of social objects. A lot of interesting ideas are devoted to the projection in the scientific literature. J. K. Johnson states that, the projection process in its development goes through three stages: the divergence (the expansion of limits of the project situation with the aim of providing rather extensive space for the solution search), transformation (the creation of principles and concepts); convergence (the choice of optimal solution from a lot of alternatives) is considered to be classical. The projection is also examined through the prism of activity on basis of which it is fulfilled. N. Dakhin considers projection as an activity for creating, developing, planning, constructing of a certain system, object, model (Dahin, 2009).

The projection as a kind of activity always oriented to provide the effectiveness of professional training and to develop professional competence strictly in area. Any projection that is due to the need of the permission of the relevant professional problem, is creative and based on the motivation, the value orientation, knowledge, skills, professional experience and personal and professional reflection. The result of the projection is a model of a specific, professional object. A new way of solving professional problems is based on this model and it provides various variants of the usage of this model.

The most important for this research is the concept of the project, professional activity which is introduced in the researches of M. Vilonsky, P. Obratsov, and A. Uman. Based on this strategy, it appears that professional projection should include the following stages: (i) definition of the projection aims, the description of the expected results in specific details and measured parameters; (ii) a mastery of the substantive aspect of projection in the context of a future professional activity (knowledge, abilities, skills, techniques, information capacity of the material, the understanding of the system of semantic relations with its elements of professional activity); (iii) identification of phasing of professional activity patterns directed on the optimum achievement of the objectives of the project; (iv) a presentation of the professional experience have to be assimilated in the form of a system of cognitive tasks; (v) the selection of appropriate methods, forms and means of implementation of project activities; (vi) the elaboration of logic of the project activities with the aim of gaining experience on the basis of the project; (v) monitoring and measuring the quality of a project through the professional reflection; and (vi) the individual adjustment of the project activities through interaction, on the basis of subjective relations.

V. Bezrukova reveals three stages in constructive project activities: pedagogical modelling (the creation of models); constructive project (the creation of a project); constructive project activities (the project itself that is more detailed, specific and close to realistic conditions). Examining modelling as one of the stages of the projection, V. Bezrukova has suggested an organizational algorithm of the project model, but the question of controllability of the project process, its evaluation and opportunity to improve efficiency remains undiscovered (Bezrukova, 1996).

From V. Genisaretsky point of view, the pedagogic process of projection consists of seven stages: ascertaining and evaluation of the results of pedagogical activity; the nomination of hypotheses about the relationship of the results with the factors of the educational process; the construction of a specific pedagogical system that is relevant to the work of the educational establishment; the creation of pedagogical system of special purpose function; the choice of the methodology of parameters measurement; comparison of the results of measuring the functioning of these systems; construction of optimized variant of the specific pedagogical system (Genisaretskij, 1988).

We are interested in the thought of G. Lebedeva, who identifies seven thematic cycles in the students training of the pedagogical projection in her study. They are a philosophical-methodological substantiation of the projection; the problem of the projection of a personality in the native pedagogy; pedagogical the essence of the pedagogical projection; the projection of the pedagogical systems; the projection of the pedagogical process; the projection of individual pedagogical technologies and pedagogical training. This approach has more theoretical than applied nature (Lebedeva, 2002).

N. Yakovleva in her studies scrutinized the as a series of sequential steps: the pedagogical invention (ideas development); the creation of a single sample (the development of a creative model); the pedagogical experiment to verify the effectiveness of the created sample (the project adjustment); creation of the final project (constructive changes in the created model) (Jakovleva, 2002).

Definition of the Essence of the Concept - "Project Competence"

From the said above it is seen that the project competence of a future teacher is regarded as an ability which is directed on the creation of the project; as scientific and practical method of studying and transforming of reality (method of practical oriented science); the form of creation which is typical for the technological culture and management culture.

To accomplish the projection that is to have the project competence, a future teacher should have certain skills that allow revealing the creative beginning of the individual. That is what reveals its productivity.

The analysis of the methodical literature has shown that there is a fairly wide range of this definition. We are interested in A. Shepilova's position, who claims that the ability to image a hasty action is based on the knowledge and previous experience (Shchepilova, 2003: 95).

In pedagogy project skills are examined from the point of view of different approaches; the place and the role of constructive and project skills in a teacher's work are revealed; the list of constructive and project skills is arranged; the recommendations to their enrichment and development are given. For example, N. Kuzmina connects project skills with the perspective planning (Kuz'mina, 1980).

G. Sorokovyh indicates that constructive activity consists of constructive informative activity (the selection and composition of the educational material, planning and construction of the educational process); structural and operational activity (planning of teachers' actions and the students' actions) and the constructional and material activity (projection of the educational and material base of the lesson) (Sorokovyh, 2013).

We agree with this position and point out that the constructive activity, which is connected with the educational work, includes the following didactic skills: (i) the projection and related perspective lesson planning; (ii) the lesson construction itself, taking into consideration all the objective and subjective realities and (iii) associated (extra curriculum, prospective) planning.

Thus, the project competence consists of project skills, which are characterized by consciousness, independence, productivity and dynamism. Their consciousness consists in making one or another action, the person is aware of the purpose of actions and manages them by means of developed skills. His independence is manifested in the ability to transfer skills from one activity to another.

The Description of the Skills Needed to Develop the Project

The efficiency of the skill is determined by its awareness that enables not only to reproduce learned actions, but also to find more effective solutions to use developed skills. The analytical skills include the ability to divide pedagogical phenomena into component elements (to be able to create a lesson; to comprehend each stage of a lesson; to find new forms and methods of presentation of a new material; the use of individual learning strategies, portfolio, computer tests, various Internet technologies; to diagnose the pedagogical phenomenon properly: the creation of a border control as a necessary part of ball-rating system that is conducted to evaluate and verify systematically the level of knowledge, practical skills and the process of learning of the educational material while studying; to find and identify the main tasks of the lesson and the methods of their optimal solutions.

In N. Ivanova's research, it is said that the necessity of the development of students' gnostic skills of scientific and methodical activity is provided by the nature of the professional activity of a modern teacher. The development of the students' skills named above is the result of obtaining the research and gnostic knowledge, skills, educational and research, educational and professional, scientific and research activities (Ivanova, 2011: 69).

The research skills such as organization of the research investigation; mastering the methods of teaching, methodology of research activities; the ability to generate original ideas; the ability to develop didactic instruments methodically competently, students' individual educational routes are no less important.

To create a certain project a teacher should have creativity and mastery. It should be said that creative skills are very important in project activities. They are related to finding our own vision in the design of a project and its implementation, views and aspirations to move away from the template, creating the organizational and methodical conditions for the development of students' creativity. The creative abilities envisage the creation and development of individual routes of studying, the development of personal portfolios, the creation of special creative environment of a lesson and extra class activities, search technologies of teaching and upbringing students, the development of interactive forms of interaction, the creation of educational products (essays, projects, papers, developing a multilevel test tasks, etc.)

To project the educational environment, we need such reflexive skills to analyze the effectiveness of the pedagogical research; the ability to evaluate pedagogical reality, self-evaluation as an indicator of reflexive self-management; the productive attitude to mistakes and failures.

On the basis of the aforesaid we can single out the following list of skills that will promote the development of the future teachers' project competence:

- analytical skills;
- gnostic skills;
- research skills;
- diagnostic skills;
- creative skills;
- reflexive skills.

To sum it up, we understand educational projection as practical oriented activity the purpose of which is to develop new educational systems and types of pedagogical activities that do not exist in practice; a new area of knowledge; applied scientific direction of pedagogy that is aimed to solve the problems of the improvement of modern educational systems; the method of regulation of pedagogical, scientific and research activities; the process of creation and realization of a educational project; the specific method of personal development; the educational technology; learning tools (upbringing). In addition it executes the supporting role in relation to other activities (Osova, 2009).

It should be mentioned that the projection and prognostication have the same aims and orientation to achievement the goals. But at the same time projection needs more severity and responsibility for the derived result that is used directly in the practice. The interaction of the projection and prognostication is that the projection as the research activity is a base for the possible revelation of new sources of the prognostication (Magsumov, 2015).

The prognostication as an intellectual procedure is used in the projection as the substantiation of the possible conditions of this or that object or phenomenon.

The construction and projection share a common basis that is characterized by the sequence of stages that help to approach the concept to its substantive implementation. In the construction there are elements of the project object on the contrary in the projection a system of interrelations of these elements is created in the development and design of the project.

The projection and modelling are interdefined because the modelling is considered as a theoretical and practical operation of the object and is widely used in the projection to create an image of an object, phenomenon or process that does not exist in reality. The procedure of the projection includes the creation of models (images) of the future that is why the modelling can be considered as a part of the projection.

It should be mentioned that the structure and content of the practical readiness of future teachers is also expressed in external (subject) skills i.e., actions that you can observe. They include

organizational and communication skills which are necessary for the development of a teacher's project competence.

The organizing activity of a future teacher ensures the inclusion of students in the various activities and in the organizing activity of a group: the usage of group and pair work. Case methods, tandem learning methods and collaborative learning are suitable for this kind of work.

A future teacher's communicative skills structurally can be presented as interconnected groups of perceptive skills, professional communicative skills in particular. A lot of researchers make attempts to determine the list of those skills that a future teacher should have. The systematization and logic order of the professional skills are carried out. We tried not only to systematize professional skills in a teacher's project activity but also to define their relationship. We consider the composition of skills in a future teacher's project and organizing activities in complex (Yalavaç, & Samur, 2016).

When considering "projection" as an imaginary and practical expression of what is possible, and what must be, it is important to characterize special groups of skills that a future teacher should be taught. We have identified the following project skills in educational activities:

- a clear definition of goals and objectives of a future training activity on the basis of diagnostics to identify the problem;
- accounting of the level of educational subject knowledge, interests, needs and opportunities of students;
- the search of the information due to the problems in scientific and pedagogical and methodological literature;
- the determination of the contents, forms, methods and means in the students' individual and collective activities;
- gaining different types of class activities with different upbringing activities in accordance to the practical, educational, development and upbringing tasks of a modern lesson;
- the usage of the system of techniques to stimulate students' cognitive activity;
- thinking out the conditions of the compatibility of the project developers;
- the cooperative with other members of the educational process (teachers, senior students, younger students) projection of the development of the creative environment;

Project skills, to our point of view, are considered to combine with other certain narrow methodical skills. We refer to them the following skills:

- reflexive skills: the ability to analyze the correctness of the formulated task of the lesson; the analysis of the compliance of the activities of the formulated task; the analysis of the efficiency of applied methods of the explanation, training and activation of an educational material, methods and means of the pedagogical activity; the analysis of organizational forms in accordance with the age features of students; their level of knowledge of subjects, the learning phase, the analysis of the reasons of success and failure in the process of learning activities; the analysis of the experience of your own activities;

- research skills: the ability to generate ideas independently, that is inventing the way of the action involving the knowledge of various industries; the ability to find missing information independently (the ability to use the Internet resources, and educational sites);

- the ability to find multiple solutions of a problem: the development of individual routes of learning and upbringing; the ability to put forward hypotheses; the ability to establish causal-result relationships; the ability to request the missing information timely; the ability to select the content, forms, methods and means of learning at the optimum combination; the ability to plan a system of stimulating students; the ability to plan individual forms of the students support; the ability to develop electronic-methodical support of students;

- group skills: the ability to plan project activities based on learning collaboration collectively; the ability to interact with any partner; the ability to provide mutual assistance in solving problems; to develop skills of intercultural communication; the ability to find and correct the mistakes in the work of the students correctly; to create the team, the group for the implementation of project activities;

- managerial skills: the ability to project a holistic process; the ability to plan learning and extra class activities; the ability to make decisions, predict their sequence and the end result; the analysis of the own activity, its course and outcome;

- communication skills: the ability to initiate the interaction, engage in a dialogue, ask questions etc.; the ability to guide the discussion; the ability to defend your point of view; the ability to find a compromise (the ability to rephrase, to use emotional semantic phrases to express your own point of view); the skills of interviewing, verbal survey;

- presentation skills: the skills of monologue speech; the ability to keep yourself confidently during the performance; artistic skills; the ability to use various means of visual methods in a presentation; the ability to answer unplanned questions.

The project competence is necessarily combined with organizational skills in learning activities that is why when working with students it is important not only to develop a project in theory, but also to implement it practically in life and get results.

Conclusion

The organization of a special learning to develop the project competence is essential in training students of pedagogical higher educational establishments. It requires the creation of algorithmic prescriptions to project different objects based on the generalized methods of pedagogical projection, diagnostics, goal-setting, having a symbiosis of abilities that are developed during the students training: the arrangement of the pedagogical practice documentation, diploma and term paper projects, its technical analysis and implementation. Thus, the project competence of future teachers is a combination of complex skills, the top of them are analytical, diagnostic, gnostic, creative, research and reflexive. Practical skills (organizational and communicative) are also important for the project competence. We examine the composition of skills as a component of the project competence of future teachers comprehensively.

Conflict of Interest Statement

The authors declare that they do not have any conflict of interest.

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