



The Place the Competency-based Approach of Education in the Educational Management System

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ABSTRACT

The article based on the analysis of the literature sources and experience in the field of economic education at Polytechnic Institute examined the system of key concepts on the subject, as well as the role of the introduction of competence-based approach in teaching practice of polytechnic Institute with a view to efficient management of the learning process. The article describes training method aimed at formation of key information and technological competences of the future economic expert, the process of psycho-pedagogical testing of students and teachers on proprietary methodology. On the basis of personal data and observations discovered are some tendencies and clarified are the conditions of computer training of future specialists in economics, as well as the need for further experimental study of pedagogical factors and relationships. The experiment allowed solving one of the main tasks of modern education which is developing the necessity for continuous updating of knowledge, accumulating the experience in getting new interdisciplinary knowledge, formation the communication skills of students.

Keywords: Educational Management, Quality of Education, Learning Process, Psychological and Pedagogical Diagnostics, Information and Technological Competence, Experiment

JEL Classifications: M54, M59, H75

1. INTRODUCTION

Classical management can hardly be called a science, since there is no clear objectivity, there are no universal research methodologies, language, etc., It is more theoretical orientation, built on management system empiric which can always find adequate method of system management under the emerging problems of industrial areas. Classical management draws its theoretical understanding from many human and technical sciences as psychology, cybernetics, manufacturing technology, information theory, etc., trying to complexify and apply them to solve the specific management tasks, fulfilling thus its own management theory. It is necessary to take into account the specificity of the human sphere and to fulfill the universal understanding of management in education as a separately taken branch.

In modern conditions the quality of specialists' training determines the further fate of Institutes of Higher Education. Like industrial

companies Russian Institutes of Higher Education embarked on a competitive market for both suppliers and consumers for the market of their products.

In this regard, the universities began to understand that it is necessary to create conditions to ensure the required level of specialists' training, and learn to manage it. Creating the system of effective institution management on the basis of quality and, along with it, a system of complex continuous education of students in the field of quality will significantly enable increasing the level of graduates' training and their competitiveness in the labor market. In our opinion, a modern institution of higher education needs the advanced methods of teaching and learning process management to be introduced. Behind the beautiful wording should not be lost the main point of the learning process - training of a qualified specialist possessing all the necessary list of general and professional competences.

2. REVIEW OF LITERATURE

Scientific understanding of person-centered learning has a different conceptual and conceptual structure depending within which framework of science this concept is considered.

For example, the field of philosophy of education (by L.N. Golubeva, O.V. Dolzhenko, N.B. Sigov V.N. Sherdakov, R. Evans etc.) investigates person-centered approach by the categories of individual, freedom, self-development, integrity as a form of self-manifestation of personality.

Scientific studies in psychology (by L.I. Antsyferova, V.V. Davydov, G.A. Kovalev, A.V. Petrovsky, I.N. Semenov, S. Ju. Stepanov, I.S. Yakimanskaya etc.) enrich the concept of person-centered education by vision of the specific nature of the personal level of human mentality, sense-bearing field, reflection, experience and dialogue as the mechanism of formation of personal experience.

Scientific studies in the field of didactics (by V.V. Zagvyazinsky, B.C. Ilyin, V.V. Krajevsky, P.S. Lerner, Lebedev, V.V. Serikov, M.N. Skatkin, V.A. Slastenin etc.) consider person-centered approach from the perspective of:

- Objectives and content of education;
- Methods and forms of training organization;
- Activities of lecturers and students in the learning process;
- Efficiency criteria of learning process.

Possibilities of implementation of person-centered education in practice were considered in the studies of V.D. Voykova, T.S. Zotova, S.V. Orlova, A.A. Piligin, L.T. Samoseeva, E.A. Sayapina, etc.,

Analysis of the literature showed that in recent years there carried out were the number of studies in the field of economic education in the following areas:

- The creation of organization models of economic education process in secondary schools (by V.S. Avtonomov, I.G. Aganov, I.A. Barilo, E.N. Zemlyanskaya, E.N. Kamyshanchenko, E.A. Kurak, I.A. Sasova, O.M. Strigin etc.);
- Focus of young generation on economic branch of study (by O.N. Azovskaya, Kh. A. Alizhanova, S.A. Lukonina, A.V. Platov, R. Kh. Tokov, etc.);
- Training of future specialists in economics in higher education system (by K.A. Balashov, T.N. Vashilo, M.M. Gerashchenko, O.V. Dronov, O.V. Zhironkin, L.M. Kovtunovich, O.A. Kudryashov, A.E. Morozov, M.M. Olesova, E.S. Penchuk, V.V. Rodigina, K.N. Solovyenko, R.A. Fatkhutdinov, L.A. Shipulina, E.R. Yarskaya-Smirnova, etc.) and secondary education system (A.A. Baronin, S.A. Bondarenko, L.I. Galamyan, E.M. Musina, V.A. Napervov, E.V. Shamanskaya, R.A. Kharchenko, etc.);
- Personal development of specialist in the field of economy (by G.M. Kurdyumov, N.A. Minkina, V.N. Tuzhilkin, K.S. Traunberg, etc.).

Based on the analysis of the literature sources and experience in the field of economic education, we can conclude that it is based on the idea of the necessity to design such pedagogical learning

environment, in which the content of the learning process would be focused on the development of professionally significant personal qualities of future expert: Competence, responsibility, mobility, flexibility, adaptability, competitiveness.

The definition of professional training level of specialists in economic field is the subject of many scientific studies of leading scientists in the field of pedagogical sciences such as K.L. Abulkhanova-Slavskaya, L.A. Verbitsky, N.N. Grachev, O.V. Dolzhenkov, V.I. Zagvyazinsky, E.A. Klimova, V.V. Krayevsky, N.V. Kuzmina, Yu. N. Kulyutkin, A.K. Markova, A.M. Novikov, L.D. Stolyarenko, V.A. Yakunin, etc.,

The problems training, professional skills, qualifications, professional competence are reflected in the scientific studies of G.A. Bokareva, S.M. Vishnyakova, V.G. Gorchakova, N.G. Grishina, A.I. Zhuk, E.F. Zeer, I.P. Kaloshina, E.A. Klimov, V.P. Kuzovlev, A.K. Markova, N.I. Mitskevich, I.F. Pleteneva, Yu.P. Povarenkov, N.A. Selezneva, etc.

Scientific ideas about the functions, structure and content of computer competence of specialists in economics are reflected in the scientific studies of G.A. Bokareva, S.V. Vorobyov, V.A. Denbrov, I.B. Kosheleva, Medvedev, and A.M. Podreyko).

3. METHODS AND MATERIALS

The first step on the way of correct perception development of training opportunities is a certain awareness of the real need for training. Some people may not quite truly realize their need to learn something new (Kobersy et al., 2015; Sunaga et al., 2016). Past experience of training - especially negative - also has a powerful effect. Therefore, the creation of genuine atmosphere of active learning around the workplace - this is a key task of the modern manager.

Defining the training needs is realized in two directions:

Analysis of tasks - the data collection about the tasks of this or that job and the required skills (assessment of need to train new employees). A detailed study of the performed work with the view to determine the required specific skills.

Analysis of activity - identifying faults and determining the methods to eliminate them by training the staff or by other methods (change of equipment, staff reshuffle). The essence of the activity analysis is in determining the difference between "cannot" and "do not want" when solving problems.

Task of educational management stated by P. Drucker, the classic of American management, consists in making people capable of community action, make their efforts effective and lessen their inherent weaknesses. This approach in management is people-centered and with all the necessity requires new approaches for training, learning and development (Kunelbayev et al., 2016) of specialists in management. One of the embodiments for this assignment is the creation and development of a learning organization model that best meet the conditions of

good management, and promoting the development of both the manager and the entire teaching staff. This, in turn, is one of the ways to rejoice cooperation and integration of psychology and pedagogy.

4. RESULTS AND DISCUSSIONS

To study the effectiveness of educational management process on a scale of Polytechnic Institute it is required to use different models of psychological-pedagogical diagnostics. The diagnosis in particular will allow finding out the effectiveness of the learning process organization. In Polytechnic Institute tested was the training methodology aimed at formation of the key information and technological competences of the future economic expert.

In the course of psycho-pedagogical experiment the following tasks we fulfilled:

1. To study the condition of quality improvement of future economist training at Polytechnic Institute. Conduct the study of formation of key information and technological competence of the future economic expert according to the experimental procedure, comparing the obtained results with the results of the traditional teaching.
2. To determine the effectiveness of the technological model of formation of key information and technological competence in the case of two specialties: 32.03.02 "Management" and 38.03.01 "Economics," taking into account the training characteristics at polytechnic Institute.
3. To identify the levels of formation of key information and technological competences of students in experimental groups, before and after the introduction of new training methods.
4. To analyze the results of experimental work and to develop recommendations to improve the quality of information and technological preparation of the future economist-expert.

In accordance with the tasks set there identified were the three main stages in the pedagogical experiment: Ascertain, educational and pilot.

During the ascertain experiment there studied the status of training of the future economists, there developed was a method of educational and pilot steps and participants of the experiment were selected.

During the educational experiment tested and specified was the hypothesis of our research, and refined was the methods of information and technological training of the future economist.

During the pilot experiment there checked were the results of educational experiment, and specified by us was the developed method as well as the summary of the findings.

To improve the reliability of the results of psychological and pedagogical experiment their processing was carried out by various methods. In the experiment were used methods of questionnaires, tests, self-diagnostics, quantitative and qualitative analysis, modeling. The complex of diagnostic measures used:

Poll, discussion, interviews, statistical and analytical processing of the experimental data and expert evaluation method.

In planning and conducting of pedagogical experiment, we relied on methodics developed by Grabar (Grabar, 1977), K.A. Krasnyanskaya, Lyusin (Lyusin, 1995), Medvedev (Medvedev, 2002), Sidorenko (Sidorenko, 2001), Litvinova (Litvinova, 2006).

For example, the analysis of the contents of assignments for submission and class assignments was carried out by the experts (Rana et al., 2016). The experts also determined the degree of task complexity and accordingly assigned a criteria score. Before starting the examination there discussed were the contents of minimum set of knowledge and skills of a student who learnt the educational material. Criteria score (G) was determined in accordance with the method developed by Lyusin (Lyusin, 1995). According to this method we calculated the rate of significance of each task- R, which indicated the degree of significance in case the correct solution of task for determining the degree of the material retention. The task significance - z was determined by the five-point scale. Expert assessment of the task: "Absolutely mandatory" - 5 points (z = 5); "Very desirable" - 4 points (z = 4); "Desirable" - 3 points (z = 3); "Preferred" - 2 points (z = 2); "Non mandatory" - 1 point (z = 1). The task significance z was converted into the indicators of significance R by the formula:

$$R = \sum_{i=1}^n \frac{z_i - n}{4n}$$

Where, n - is the number of experts; z_i - significance assessment by i-expert.

Criteria score G of each level class assignment (high, average, low) is obtained by adding indicators of significance - R for all the assignments of the task.

$$R = \sum_{j=1}^n \frac{k_j - n}{4n}$$

Where, k - number of tasks (questions) in assignment; j - assignment current number.

The experts determine the two threshold points are: $G_{b1} < G_{b2}$. If a student scored fewer points G_{b1} when implementing the task, his knowledge and skills correspond to low level of formation of the examined property, if more than (equal to) G_{b1} , but less than G_{b2} - average level; if more than (equal to) G_{b2} - high level.

To compare two dependent sample groups according to the status of unspecified property when the property can only be measured on a nominal scale used was the McNemar test (Criterion statistics was determined by the formula (Medvedev, 1999):

$$T_2 = \text{minute (b,c), (for the case } b+c \neq 20).$$

In ascertain experiment we conducted a survey of students (137 students trained for specialty: 32.03.02 "Management" and 38.03.01 "Economics," as well as lecturers (16 persons)

of Polytechnic Institute (Lebedeva et al., 2016). By means of a survey, we tried to find out the attitude of students and lecturers to usage of computer information technologies in general, and in their professional activities in particular.

Responding the question in questionnaire: “What is your level of computer knowledge?,” the results of the responses were distributed so that among the number of surveyed students 27% proved to be very inexperienced users, 36% - inexperienced users, 18% - confident users, very confident - 19%; among the surveyed lecturers: 6% have no computer knowledge, 12% proved to be very inexperienced users; 31% - inexperienced users, 38% - confident users, 13% - very confident users.

Responding the question in questionnaire “How often do you use a computer?” among the students responses were as follows: More rarely than once a month - 0% from once a month to once a week - 48%, more than once a week - 22%, almost every day - 30%; lecturers: More rarely than once a month - 9% from once a month to once a week - 42%, more than once a week - 25%, almost every day - 24%. Students have the opportunity to use a computer more frequently in college or at home. This is due to the fact that many students already have part-time job somewhere in the specialty, as currently an economist cannot work without PC. The number of lecturers using a computer almost every day mainly includes either those teaching computer sciences, or those having computer equipment at home.

Analysis of the personal data of students and lecturers revealed that most students are not well prepared to use computer equipment in their professional activity and in particular, in the educational. Their knowledge and skills on the use of information technologies in their professional activities are not fully formed and a small accumulation of personal experience in the sphere of use of means of information and technological. An analysis of the responses of lecturers revealed that they have a positive attitude to the usage of information and technological means in the learning process and would like to learn more about computer.

A study carried out by us, indicates a constant attention of lecturers of different disciplines to the problem of the usage of information and technological (Sergeevich and Vladimirovich, 2015; Zakharov et al., 2016) in the learning process. On the basis of personal data and observations we found out some trends and to clarify the conditions of computer training of future specialists in economics, as well as the need for further experimental study of pedagogical

factors and relationships. They show that the opportunities for information and technological training of students, available at Polytechnic Institute, are still insufficiently used.

Analysis of the ascertaining experiment results also indicated that the level of formation of the key components of information and technological competence of students of the economic profile of Polytechnic Institute still remains insufficiently developed (Kalimullin et al., 2016). Such status of information and technological training of students negatively affects the quality of both general professional and special training and does not conducive to the successful assimilation of the economic disciplines. Therefore, it is necessary to create within the framework of learning process of Polytechnic Institute a system of conditions for formation of key information and technological competencies, which we presented as didactic, organizational, pedagogical and psycho-pedagogical.

During the educational experiment compared were the knowledge of students in the group trained for the specialty: 080110 - “Economics and accounting.” During the educational experiment the following was carried out:

1. Established were the methods for determining the levels of formation of key information and technological competence of students of economic profile;
2. Identified was the initial quality level of formation of key information and technological competencies;
3. Determined are the pedagogical objective of training phase;
4. Established was the content area structure of professional disciplines in economics.

Diagnostic methods of learning process were based on the data on the structure of key competencies: Content-evaluation (Silnov and Tarakanov, 2015), motivation and volitional, socio-cultural and professional and personal component. To the methods of “measuring” of studied properties we assigned the following: Individual and group discussions; monitoring the work of students at lectures and practical classes; polls; verification and analysis of the implementation of practical tasks; monitoring the activity of students when creating non-standard situations; monitoring the activity of students in groups; computer testing of students and analysis of its results (Chueva et al., 2016).

Diagnostic methods of the process of formation of key information and technological competencies in the three stages of its development are shown in Tables 1-3.

Table 1: Diagnostic methods of formation of key information and technological competencies in the first stage

Personal qualities	Their display	Diagnostic methods
Mastering the skills to update knowledge. Perception of information and mustache-military knowledge in using information and technological	Able to organize knowledge, solve tasks by means of a computer	Computer testing, interviews, surveys; monitoring the activities of students in the discussion of the basic professional concepts
Conscious motivation to assimilate knowledge	Able to find the necessary knowledge independently	Individual discussions, oral and written surveys, questionnaires
The realization of design and training activities as a means of intellectual development	Synthesize knowledge, create models and study them	Observation, interviews, computer testing
The need for continuous updating of knowledge, communicativeness development	Obtaining new knowledge	Practical tasks, monitoring the search activity of the student

Table 2: Diagnostic methods of formation of key information and technological competencies in the second stage

Personal qualities	Their display	Diagnostic methods
Ability to use the obtained knowledge in practice, improving the sense perception and updating the knowledge, cognitive development	Independently find the necessary knowledge and study the problem by means of a computer	Practical tasks, monitoring the student's work
The ability to focus on the set task, their practical solving	Analyze the obtained knowledge and apply it in practice	Computer testing, individual interviews
Manifestation of sense of purpose, responsibility, pragmatism	Understand the role of knowledge for the development of creative thinking	Interviews, analysis of students' questions, monitoring the activity of students in groups
Adaptability, development of competitiveness, self-improvement when applying the knowledge in professional activity	Able to use computer methods for data collection, storage, can independently find the optimal way of handling a problem	Monitoring the search activity when making decisions in practical tasks on the basis of self-gained information

Table 3: Diagnostic methods of formation of key information and technological competencies in the third stage

Personal qualities	Their display	Diagnostic methods
Mastering the skills of creative approach to the application of knowledge, active practice of knowledge and skills	Synthesize and analyze new knowledge, know the methods of individual work	Practical tasks, monitoring the team work of students, creation of situations requiring teamwork
The development of unconventional motives in creativity in the application of knowledge	Realize the role of knowledge in the development of creative thinking. Able to find nonstandard solutions of professional tasks with the help of the gained knowledge	Individual interviews, snap polls, practical tasks
Mastering the skills of creative approach to the application of knowledge with the use of computer technologies, personality	Able to use information and computer technologies when searching new knowledge, find their own solutions in a variety of work situations	Monitoring the search activities of students, preparation of reports using information obtained through the network
A creative approach to professional activity, competence	Possess creative techniques of individual work, predictive design methods, able to analyze the situation and find optimal solutions of professional tasks	Observation, interviews, survey

Qualitative characteristics of the stages of development of key competences of future economists linked with the characteristics of the above components selected by us, enabled to obtain more reliable information about the actual status of the formation of key information and technological competencies.

5. CONCLUSION

Diagnostic methods are necessary to us as a measurement tool that can be used to objectively assess the dynamics of the learning process and the effectiveness of educational management. Assessing the student's activity results was reflected in the quality characteristics. One of such characteristics is the "level of training," reflecting the student's ability to use knowledge and skills in dealing with theoretical and practical professional tasks. Data on students achieving a certain level of formation of key competencies provide the possibility of reasonable choice of further ways of training, differentiation and individualization of the learning process. With the view to check the level of formation of key information and technological competence of students in the learning activities used were the achievement tests and questionnaires. The process of formation of key information and technological competencies consisted of comparing the levels of training of individual students and fixation of achievement (or failure to achieve) of certain level of formation of this or that component of the key information and technological competence by each student.

The main purpose of formation of key information and technological competence of students in the first stage consisted in the acquisition of basic knowledge and skills necessary to adapt to the learning environment. Content-evaluative component of professional economic competence in the first stage characterized the students' acquirement of the skills to acquire knowledge and process information using new information computer technologies. Conscious motivation to acquire knowledge contributed to development of self-consistency of students in searching the required knowledge and formed the skills of use the computer technology help systems. Formation of the socio-cultural component contributed to the intellectual development, synthesis of interdisciplinary subjectively new knowledge on the basis of economic and information and technological knowledge. Developed was the need for continuous updating of knowledge, accumulated was the experience of gaining new interdisciplinary knowledge and formed were the communication skills of students. Using teaching materials at this stage (lecture notes, the contents of laboratory and practical training, guidelines) contributed to the systematization of economic knowledge and formation of understanding of economic laws and the economic transformation processes taking place in our country.

The usage of such diagnostic methods will allow the management of any educational institution, representatives of the Academic Methodological Association, personally to lecturers and methodologists reducing notably the time required for the management of learning process, improving the quality of

preparation of experts of an economic profile of the higher education institution.

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