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THE IMPACT OF KAIZEN PHILOSOPHY ON THE DEVELOPMENT OF PERSONAL-PROFESSIONAL ENVIRONMENT OF THE FUTURE SPECIALIST

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The article deals with the topical problem of pedagogical science – study of the development of the personal-professional environment of the future specialists in the higher educational institutions; in the process of professional preparation the future teachers of the higher technical educational institutions with the help of introduction of the strategy of educational audit as the one of the aspects of kaizen philosophy are involved into the atmosphere of the “saving” use of resources of the higher technical educational institution.

The idea of “confinement modeling” introduction is defined as the specific lean-technology. The scientifically grounded pedagogical conditions of deployment of experimental technology of monitoring of the professional preparation of future teachers of the higher technical educational institutions were introduced. The pedagogical expedience of such outrunning preparation of the future teachers of the higher technical educational institutions based on kaizen philosophy was proved. The effectiveness of the introduction of lean-technology was experimentally verified: the parameters of experimental technology of monitoring of the professional preparation of the teachers of the higher technical educational institutions were grounded, the productive methods and means of its introduction at the expense of IEM actualization, scientific creation development (based on the scientific-pedagogic probation), elective courses, practically oriented activities introduction, qualification work preparation were concretized

Keywords: higher technical educational institution, professional preparation, kaizen philosophy, educational audit, saving production

Актуальність дослідження полягає у вивченні особливостей трансформаційних змін в суспільстві щодо професійної підготовки майбутніх фахівців у вищих технічних навчальних закладах; уточнені стратегії впровадження освітнього аудиту у процесі професійної підготовки майбутніх фахівців як однієї з граней філософії кайдзен

Ключові слова: вищий технічний навчальний заклад, професійна підготовка, філософія кайдзен, освітній аудит, ошадливе виробництво

1. Introduction

Productivity of educational system and the quality of education is the subject of the many discussions and scientific researches for today that is the evidence of concern about the level of preparation of the future specialists in the higher educational institution, because the level of their professional preparation largely determines the potential of the society development. The educational audit as the type of social audit is the one of the mechanisms of control on the social responsibility of the higher technical educational institution, so the mechanism of the rise of its functioning efficiency. Thus, the system of educational audit of the professional preparation is one of the aspects of kaizen philosophy [1], developmental direction of the modern pedagogy in the higher school that is considered as the productive way of optimization of educational process in the higher technical institution and the saving use of its possibilities.

2. Analysis of the last researches and publication on the problem

The problems of the rise of education quality permanently are in the spotlight of the scientific community: the conferences, seminars, “round tables” are hold, the Internet-conferences are initiated but the efficiency of these arrangements still the low because there is no introduction into practice. Thus, among scientists who consider the problems of social audit, public expertise of the educational activity, quality of educational process and its results we must name Belyaeva A. [2], Bolotov, O.

[3], George M. [4], Lukina T. [5], Melezinek A.[6], Nekrasov S. [7], Paraschuk O. [8], Fidelman G. [9], Khrykov E. [10], Efremova N. [11] and the others. Nonetheless the interesting and fruitful works of these authors indicate the absence of the unity in the views on the essence of educational audit and methods of its introduction.

3. Aim of the article

The aim of the article is the analysis of the state and prospects of educational audit introduction into the existing system of assessment of the quality of educational activity of the higher technical educational institution as the important component of kaizen philosophy as to the professional preparation of the future specialists.

4. Educational audit as the mechanism of introduction of kaizen philosophy into the process of professional preparation of the future specialists in the higher technical educational institutions

The aim of educational audit is elaboration of the practical recommendations as to the solving of the detected problems that deter the rise of the quality of the corporate educational activity of the subjects of education system, their permanent process of development (kaizen) or attainment of the stable high indices of education quality. And despite the fact that the notion “educational audit” came in the system of categorical-terminological base of humanities rather recently, is has already several meanings. Thus, the educational audit is considered as:

1) the control of the quality of preparation of students and specialists in educational institutions and other organizations that realize the educational preparation;

2) attestation of educational institution for the quality of education.

N. Efremova gives more detailed definition, considering the educational audit as the independent assessment of the results of educational activity by the special attestation services that have a certificate for the control-assessment procedures using standardized methods in compliance with the rules fixed in educational legislation or other regulatory documents [11]. According to the author, educational audit is directed on satisfaction of the needs of individuals or educational institutions for the reliable information about the level of educational achievements and the main requirement to such audit – the pure honesty, independence, correspondent professional preparation and use of the modern control-assessment means and procedures.

Ukraine started the use of methodical instruments for educational audit as to the effectiveness of the higher educational institutions activity such as the audit of administrative activity grounded on the standards and experience of international higher audit institutions that can favor the permanent improvement. So, the one of characteristics of any system that determines the productivity of its functioning is the adequate system of support of the processes of collection, accumulation, permanent search, processing and transmission of information. It must guarantee for the heads of the higher educational institution of all levels the necessary minimum of information about the state and features of the continuous development of such processes and systems that they manage and are responsible for. At the same time information must be maximally comprehensive by the volume and content, objective, concrete and observed in its dynamics. Such monitoring of the education quality in the higher technical educational institution allows also the continuous survey of the state of education on the whole and of its separate components.

According to the results of educational audit the higher technical educational institutions must guarantee to the society as a whole and to the industry in particular the available, “real” means for the support of educational process and realization of the offered programs of professional preparation. In such a way they guarantee the collection, accumulation, analysis and use of information that is important for the productive management of the teaching programs and other types of activity.

Taking into account the main aim of activity in the higher technical school that is preparation of the future specialists of technical profile we face with the question, what are the properties of the higher technical educational institution?

Firstly, the novelty of approach to the professional preparation of the students – “predictability of the knowledge production”; alongside with the deepening of specialization, is realized the preparation of specialist on interdisciplinary specialties such as biotechnology, biophysics, electronics, engineering psychology, economic cybernetics, systems engineering, industrial ecology, ergonomics and so on, that has the correspondent impact

on the features of educational environment of the higher technical educational institution, its dynamic qualitative characteristics and the culture of social dialog between the higher technical education and economy.

Secondly, the continuousness, which important resource is the increase of the volume and branching of independent work and individual forms of learning that is the ground of the further personal, professional and career development.

Thirdly, the shift of the activity accent from the educational aspect to the scientific and productive one allow solve the problem of preparing specialists who correspond to the modern requirements namely to the saving use of the educational process possibilities in the higher technical educational institution. Especially, the development of fundamental researches, rise of the specialization level of scientific-pedagogical staff, improvement of pedagogical and social infrastructure of the higher technical educational institution as the center of knowledge-based technologies, culture and education, science and production.

So, it is expedient to leave the prevalent today orientation on the “operative arming” and transfer to the “operative generation”. Operatively armed during the process of education with the certain algorithms of the solving the concrete problems, the future specialist feels difficulties and complication at transferring this technology on the other classes, adjacent branches of knowledge, especially in the practical activity, so there is the problem of the low coefficient of useful actions, obtained knowledge, skills and abilities connected with it. We think that the one of the possible directions of solving this problem during, for example, postgraduate preparation is the rise of educational process quality by its combination with the direct practical experience. Involvement of postgraduate students as the future teachers into the participation in the different types of pedagogical activity it is the wide field of approbation and actualization of the received professional-pedagogical knowledge that are realized not in the disciplinary-isolated form but in the integrated-synthetic one. Such kaizen philosophy as some kind of innovative form of education guarantees: the rise of understanding of the applied aspects of knowledge, generation of knowledge in the close practical fields, favors the permanent development of worldview of the future teacher, his practical orientation and sureness at making professional decisions. And the professional experience obtained in such a way naturally forms the “continuous value flow” and the educational process acquires the character of prognostic “knowledge production” directed on the “double outrunning” and the saving use of the educational process possibilities in the higher technical educational institution.

5. Results of research

The verification of the kaizen philosophy impact on the personal-professional environment of the future specialist was carried out in our research at the expense of substantiation of the advantages of technology of monitoring of the professional preparation of the future teachers of the higher technical educational institutions which base is an idea of the outrunning professional

preparation as to formation of the readiness of the future teachers to the professional activity in the higher technical educational institution. The logic system of the professional preparation of students in the higher technical educational institution at the all levels, from specialization to MA course and postgraduate course on the grounds of formation of prognostically oriented educational environment was constructed.

The stable deployment of the experimental technology of monitoring of the professional preparation of the future teachers of the higher technical educational institutions was attained by introducing in the educational process of the higher technical educational institution the pedagogical conditions separated during the research. Introduction of the first pedagogical condition (guaranteeing of diversification of the professional readiness of the future teacher of the higher technical educational institution) allowed the innovative filling of the content of educational programs that are possible for realization of the professional preparation of the future teachers of the higher technical educational institutions, preparation of the students of the higher technical educational institution as the potential future teachers of the higher technical educational institutions and establishment of the expedience of realization of the certain logic of the order of its learning. The diversified system of professional preparation was continuous and discrete that was actualized in the deployment in time of the stages of professional preparation of the future specialists in the higher technical educational institution and the basic and profile courses were determined as the procedural addition.

The second pedagogical condition (providing of pedagogical innovations in the process of formation of the readiness of the future teachers of the higher technical educational institutions to the professional activity) actualized the creation of pedagogical laboratory, realization of the experimental technology of monitoring of the professional preparation of the future teachers of the higher technical educational institutions by both traditional and diversified educational programs and allowed introduction of the whole system of experimental technology of monitoring of professional preparation in the innovative process of the higher technical educational institution and realization of the providing of pedagogical innovations which main parameters in the process of formation of the readiness of the future teachers of the higher technical educational institutions to the professional activity were the following: student, teaching materials, cooperation with the teacher-scientist, permanent monitoring of knowledge.

Within the third pedagogical condition were used pedagogically expedient and productive didactic means of the outrunning professional preparation of the creative individuality of the future teacher of HTEI. Their use intensified the demonstration of the outrunning professional preparation of the future teachers in the higher technical educational institution.

Organization of the positive communication in the system “teacher-scientist – future teacher” (the fourth pedagogical condition) focused on introduction of the coach-pedagogy in the educational process of the higher technical educational institution. In particular, enrich-

ment of educational process of the professional preparation of the future teachers of the higher technical educational institutions was characterized with the systemic introduction of elective and learning courses. The special importance was acquired by the ability of the future teachers of the higher technical educational institution to introduce the modern innovative lean-technologies of the positive communication in the subsystem “teacher-scientist – future teacher” as the dominant of introducing the fundamental principles of the coach-pedagogy in the higher technical educational institution. It was proved that the formation level of the scientific-pedagogical activity of the future teachers of the higher technical educational institutions is characterized mainly with the value attitude, skills of coach-interaction, reflection, striving to the permanent kaizen-growing in the personal and professional senses.

The parameters of experimental technology of monitoring of the professional preparation of the future teachers of the higher technical educational institution were defined as following: professional thinking development, personal orientation, independence dynamics, reliance on the modern pedagogical reality in the higher technical educational institution. The productive ways and methods of experimental monitoring technology at the expense of the IEM intensification, scientific creation development (based on the scientific-pedagogical probation), elective teaching courses introduction, practically oriented activities, qualifying work preparation, were concretized.

The local system of monitoring of the professional preparation of the future teachers of the higher technical educational institutions which content kernel was reflected in the process of the professional preparation of the future specialists, monitoring accompaniment of this process at the expense of introduction of instrumental-projective model of experimental technology of monitoring of professional preparation of the future teachers of the higher technical educational institution was experimentally grounded. The conceptual idea of “confinement-modeling” as the specific lean-technology that was considered as the systemic technology of formation and strategic development of the processes of groups organization was offered.

The program of realization of monitoring of the professional preparation was grounded on the synergetic method of rhythm-cascades. The criterion of assessment of the functioning of personal-professional orientations in the educational space of the higher technical educational institution was the structural-systemic one as the instrument that helped to select parameters and to estimate them; it has the subjective origin grounded at the moment of its construction and objective measure that allowed present the pedagogical value in the quantitative indices with the certain exactness. The scale that was used to measure the productivity level of the local modeling has the logarithmic character and was expressed by informational value. The indices of the level of the local modeling understanding of the monitoring of the professional preparation of the future teachers of the higher technical educational institutions changed according to the set criteria within: $0,0 \leq H(p) \leq 1,0$. Generalization of quantitative levels was determined by the following indices:

- 1) $0,0 \leq H_X(p) < 0,20$;
- 2) $0,20 \leq H_X(p) < 0,40$;
- 3) $0,100 \leq H_X(p) < 0,140$;
- 4) $0,80 \leq H_X(p) \leq 1,0$.

Productivity of using the local model structure in the process of monitoring of the professional preparation of the future teachers of HTEI was determined on the base of constructed criteria-assessment apparatus for all models of conception by the way of construction of the five-level structural-systemic criterion.

Diagnostics of the effectiveness level of the use of the monitoring system of professional preparation of the future teachers of the higher technical educational institutions, analysis of qualitative and quantitative changes of the process of experimental monitoring technology functioning were realized step by step both by using diagnostic methods at the ascertaining stage and introducing the system of monitoring of professional preparation. The complex state of the levels of the total data of model-structures was determined. The changes that took place at the functioning levels of each model-structure of the local system of monitoring of professional preparation of the future teachers of the higher technical educational institutions were expressed in the strengthening of its connection that, in its turn, favored the strengthening of the internal unity and coherence of the experimental technology of monitoring of the professional preparation of the future teachers of the higher technical educational institution.

It was proved, that the productivity of using the local system of monitoring of the professional preparation of the future teachers of higher technical educational institution depends on the construction of criteria-assessment apparatus of diagnostics of functioning for all models-structures of the local system of monitoring of professional preparation and introduction of experimental monitoring technology was effective and allowed considerably optimize this process.

Proceeding from aforesaid, the tasks of educational audit in our research are the following:

- determination of the correspondence of resources, dynamics of their transformation and the final results of the common activity of the subjects of educational organization to the license and accreditation requirements, requirements of educational programs on the base of the unified system of criteria, indices and methods of their measuring of the assessment system of the education quality;

- detection with the help of problem-oriented analysis of contradictions, problems and causes of incoherence between the current state and planned results of the quality of the common educational activity of the subjects of education system;

- elaboration of the recommendations for the operative correction of conditions and processes of educational activity for attaining the better results correspondent to the aim orientations of educational organization during the academic year and at every stage of realization of educational program.

So, in such a way the readiness to the professional activity became the result of professional preparation of the future teachers of the higher technical educational institutions. Diagnostics of the effectiveness levels of the elaborated system of monitoring of professional preparation of the future teachers of the higher technical educational institutions indicated the positive changes in the UG of students. Thus, for example, according to the results of the final stage, the data were distributed as following: low level in the UG – 10 % (in CG – 30 %), middle 13 % – UG (CG – 28 %), sufficient – 55 % UG and 29 % CG, high – 22 % UG and 13 % CG respectively. The coefficient of formation of readiness of the future teachers of the higher technical educational institutions to the professional activity in UG increased more significantly (from 0,471341463 to 0,773780488), than in the control (from 0,457012195 to 0,532317073).

6. Conclusions and prospects of the further researches

The analysis demonstrated that the educational audit as the new educational service just begin to be formed in the native practice. For introducing the system of educational audit as the component of educational process it is necessary to solve several organizational, socio-economic and psychological-pedagogical problems:

- To elaborate the notion-categorical apparatus of educational audit;

- To create theoretical and regulatory grounds (standards) of educational activity and its results in accordance to the international ones;

- To optimize the control structure, ground the didactically justified combination of the state and social control, to guarantee the effectiveness of audit;

- To solve the problems of psychological perception of the results of educational audit and the readiness of the teachers of the higher technical educational institution to the independent assessment of the results of their work;

- To prepare the users of educational audit for the orientation in the flows of educational information;

- To guarantee the standardized forms of presenting the data, analysis and correct interpretation of the results of educational audit.

Such system of the public expert assessment must not substitute or duplicate the state control from the authorities of education administration, but must be directed on the additional public assessment of the quality of functioning of educational institutions; moreover, it must be agreed with them and willing.

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ОСОБЕННОСТИ ОРГАНИЗАЦИИ ДЕЯТЕЛЬНОСТИ СОЦИАЛЬНОГО ПЕДАГОГА С МАРГИНАЛЬНЫМИ ШКОЛЬНИКАМИ

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В статье обоснована актуальность комплексной социально-педагогической работы с маргинальными школьниками. Выделены направления профессиональной деятельности социального педагога с детьми. Освещена структура работы социального педагога с маргинальными школьниками, которая включает три этапа реализации действий, функции, условия и критерии эффективности. Сделан вывод о необходимости совершения социально-педагогической работы в единстве всех ее структурных компонентов.

Ключевые слова: *социальный педагог, маргинальный школьник, организация деятельности социального педагога, образовательное учреждение, социально-педагогическая деятельность, социальное становление, социальное развитие.*