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COMPARATIVE ANALYSIS OF HIGHER VOCATIONAL TRAINING SYSTEMS IN VARIOUS COUNTRIES

The higher vocational systems comparative analysis of Russia and EU countries is presented.

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1. Introduction

Experience shows [1, 2], that in the course of comparative research it is expedient to find out the following:

1. Common and specific areas in educational standard structures.

2. Up-to-date qualification graduate requirements represented in some corresponding fields.

3. Ways of presenting the learning process outcomes (types, tasks and activity levels; qualifying characteristics; requirements to training levels; requirements to general awareness; requirements to separate subject-cycle awareness; requirements to the erudition on separate subject discipline; requirements to social and communicative competence, etc.).

4. Integrated characteristics applications for describing the learning process outcomes.

5. Methods for designing the education contents (themes; laws; concepts and categories; methods and related didactic units).

6. "Input" parameters in the learning process (applicants readiness requirements; requirements to the faculty, etc.).

7. Objects for development, expert testing and educational standards approbation (teachers; students; graduates; branch ministries and departments; employers and other social partners; vocational

associations, such as Chambers of Commerce and Industry, Guilds; vocational professional communities; higher school vocational associations, etc.; labor and social development authorities; employment services; the Ministries of Economics, etc.).

8. Requirements to the conditions and resource provision of the learning process.

9. Inclusion of approbation, public expert testing, correction and updating stages into technologies of educational standards designing.

10. Use of educational standards in the course of designing educational systems by higher schools (regarding of learning programs; education and method-based support; material base development; professional development and the faculty retraining, etc.).

11. Domestic educational standards conformity to world-level quality standards in the higher education submitted by the world leading higher schools.

12. World-scale and European trends of higher education development reflection in domestic learning standards (e.g. the Bologna Concord).

13. Basic conclusions from the comparative analysis results.

For example, for the recent decade of their sovereignty, each of CIS countries has selected their own specific model of higher education architecture, its legal maintenance, the areas and types of their reforming and modernization in a view of universal and all-European tendencies of the higher school

development. For example, the Ukraine has an essentially distinguished higher education structure, due to adopting the educational stage classification of ISCED UNESCO (1997), where the secondary vocational training is considered as a level of university higher education. It has resulted in an actual innovation,- the development of a unified package of both secondary professional and conventional higher education standards.

2. Comparative analysis of higher vocational systems of Byelorussia, the Russian Federation and Ukraine

In Byelorussia, the Russian Federation and the Ukraine, independent conceptual-methodological standardization bases have been formed, as well as its organizational and regulative tools including the development stages, expert testing, approbations, corrections, implementation and the following updating on a constant basis. The highest harmonization degree of the standards designing is observed on Byelorussia and the Russian Federation side. They are guided by the "process-based input" standards, while the Ukraine obviously sticks to the standards fixing the learning process results in their modularized structure. Besides, the Ukraine standards are characterized by developing an efficient tool for standard draft correction and by detailed development work on designing and expert testing procedures for the sake of a high consensus level at a large scale of ministries and departments, within the academic environment.

The conceptual-structural bases of the Russian state educational standards for higher vocational training are under the governing influence of their norm and legislative framework established by the Laws of 1992 (the first-generation higher vocational training state educational standards HVTSES) and of 1996 (the second-generation (HVTSES). The Ukrainian standards employ a different approach and realize principles of

target-considering, prognostics, technology awareness and diagnostics and are labor and socially oriented as the basic target-making subject of the higher education. The ternary structure is inherent in educational standards: *the state component* (general requirements to the fields and majors qualification specification, to each educational-qualifying and educational level); *the applied-research component* (generalized norm-based contents of education and training in certain fields and majors including diagnostic tools); *the higher school component* (generalized variant contents of education and training as well as the norm-based contents of training and a variant part of diagnostics).

A specific feature of Byelorussia educational standard is its integral inclusion into the nation-wide and international system of standards. That has enabled to generate the optimal procedure of their coordination and recognition, a previous intensive development of the concept base followed by a national-wide discussion, establishment of experimental platforms for approbating a higher education alternative structure on the base of Belarus State University and Belarus National Polytechnic University, and system-based building of the Humanities cycle for educational and social purposes.

The comparative research of specific standards in the field of engineering, humanities, pedagogic and medical education have revealed:

- close relationship between Byelorussia and the Russian Federation educational standards general structural compositions;
- high degree of similarity between the three countries higher education contents;
- Ukrainian developers deeper adherence to a system-active approach towards the learning process contents and organizing, close connection between the graduation requirements to mastering vocational activity systems and the diagnostic means enabling to perform

testing, and the graduates meeting declared requirements specified as the education purposes and results. The standards development in the Ukraine is fulfilled in succession and positive experience of the Soviet school development between the period of 1985-1990.

The strengthening and activization of interacting between the higher education systems in CIS-countries can be the a precondition for their constructive joining developing European educational space and the European labor market of higher education specialists *on the basics of the integration priority within the framework of the corresponding CIS-countries.*

The research fulfilled allows to draw the following conclusions:

1. There is rather intensive process of becoming the original features of the national higher education systems at the post-Soviet stage of their reforming. On the one hand, it results in the enrichment of variety of higher education systems in Europe which is related by the Lisbon Convention to «exclusive property which demands all possible respect».

2. On the other hand, it is possible to observe a tendency of the higher education structures divergence, to multi-layer models appearance. That can make it difficult to mutually recognize diplomas and qualifications between Byelorussia, the Russian Federation, the Ukraine, and Europe-wide education and labor market.

3. Each country designs its own educational standards as a new type of the projecting of are developed. Thus, the conceptual-methodological basics for educational standards, their structure, contents, development and introduction sequence are significantly different. Under some circumstances, it can be a complicating factor for the maintenance and development of the universal educational space, to lead to a lower potential in comparability and confronting vocational and academic qualifications awarded.

4. Upon finding out new areas and means for converging the higher education systems in Baltic and CIS-countries, that will be possible within the framework of the Bologna process, to define common parameters for creating the all-European higher education space step by step, to introduce new without adapting outdated curricula, to provide a competence-obtained assured quality degree, instead of academic hours.

It is also expedient to develop compatible quality monitoring systems specifying the graduate requirements to the training level of comparable criteria, tools and assessment methods.

3. Comparative analysis of higher vocational systems of Russia and EU countries

The comparative analysis [1] of the area titles in Russia and EU countries (Germany, France, Norway and Czech Republic) testifies of impossibility in their univocal understanding not only between Russia and EU countries, but also between the EU countries and within separate countries.

The subject titles non-systematic basis is stated. Some liberties in titling are especially tangible in special subjects. A set of higher schools academic subject titles of the same area is considerably different, even in the core courses.

The amount of higher school majors in areas is also not limited, and is determined probably by the market conditions.

A higher system-based approach can be traced in the Russian system of higher vocational training fields and subject titling.

A list of the Bachelor's degree and Diploma-level fields in a quantitative sense, does not require any reduction. Its partial structurizing is possible, however it demands further research. The Russian system of higher vocational training field titles wording, in the area of

engineering and technologies at least, is substantially thought over and justified, but it is not drawn to their foreign analogues.

Under the conditions of a complete transition towards two-level training, it is suggested to transfer all the majors within an academic field into the category of specializations of relevant areas. The majors beyond the fields should be united into groups called as “fields”, with all possible drawing their titles to their foreign analogues. It is suggested to leave Diploma-level training, at least in the field of engineering and technologies (thus, to retrieve the “Engineer”-qualification). Within the framework of Russia participation in the Bologna process, to insist upon two paths of two-level higher vocational training in Russian higher schools, i.e. “Bachelor-Engineer” and “Bachelor-Master”. It is suggested to carry out the training either under the mod of “4 + 1” for Engineer’s qualification and “4 + 2” for Master’s one, or under the mode of “4 + 2” for both education paths.

The scope of fundamental training (the natural-science discipline block) is suggested to be left at the existing level and not diminish it at all.

There exist serious basics for revising the discipline contents conditionally united under the title of “Computer Science”. First, practically all higher school applicants are taught to the basics of computer skills. Second, almost all the standards provide the programming skills awareness on all-level algorithmic languages. However, in practical activities these skills are not used – students and specialists work in specific software environments such as MathCad, MathLab, PCad, the AutoBoor, etc. Therefore, it is obviously necessary to concentrate on studying these high level systems in the development of new standards and curricula. Certainly, these proposals are of preliminary character and require a wider discussion with experts.

It is necessary to make crucial decisions concerning the humanitarian and social-economic block since it is

not similar in any way to foreign standards. It seems reasonable that the following choices are possible here:

- to transfer a significant part of the humanitarian and social-economic block to being studied in the secondary school (especially after establishing a 12-year secondary education course);

- to transfer a significant part of the humanitarian and social-economic block into the category of optional disciplines and elective courses;

- to modify the knowledge and skills requirements on foreign languages, leaving reading and translation only as the core course. To transfer the rest part (spoken language) into the category of elective course beyond the framework of obligatory academic hours and/or additional educational services. In any case, it is necessary to make alterations (the best way – a higher freedom of higher schools) to the humanitarian and social-economic block standards for overseas students training, within the framework of international academic mobility;

- to include obligatory disciplines of all engineering fields connected with descriptive geometry and technical drawing in the learning programs on mathematics and computer science;

- to reduce up the core course on “Life Safety” which is obligatory for engineering fields, to “Safety Basics” (conditionally), relative to any specific major/specialty, and to transfer general issues of the civil defense, personal safety in private life, etc. to the secondary school education area;

- to introduce the specialization disciplines into standards of the Bachelor’s degree fields in the bulk of 20-30 % of the total academic hours. It enables students to select the further path of training both within the Engineer-level program, and the Master’s-level program deliberately, and to master some second-level corresponding program more efficiently. At the same time, that enables the Bachelor's degree holders to acquire profound knowledge in the area selected, apart

from "uncertain technical" education, allowing to work according to the major/specialty, directly after graduation. It is obvious that currently employers accept the Bachelor's qualification rather distrustfully.

4. Conclusions for the development of the Russian higher vocational training system

1. In connection with the economies globalization, Russia entering the global educational space, joining the Bologna declarations by Russia in 2003, the issue of forming the training fields comparable (recognizable) Specification List turns especially acute.

2. The analysis performed on the present domestic and foreign specifications areas, majors/specialties, their titles, curricula, qualifications in the field of engineering and technologies testifies that all of them are various and individual for each country. At the same time, during the comparison analysis on the basic activity spheres essential distinctions in the majors/specialties number and titles can be observed.

3. A general approach to the Specification List of training fields and majors/specialties should consider both domestic and world-wide experience in learning program/course compiling by the nomenclature, their structure and contents.

4. For developing a new Specification List, the following principles are proposed:

- formation of an "activity sphere" as a factor determining the qualification (degree) "Bachelor's (in the field of)" at the first higher education level;

- the activity purpose defining (operation, designing, system analysis, science and teaching in the higher vocational training system), as an achievement factor at the second level of qualifying "Graduate Specialist, Master";

- use of qualifications additional to the basic

higher vocational training "Bachelor in the Field and/or Science".

5. Specification Lists on Bachelor–Master training fields and graduate Diploma-level training require converging. Their approximate structurization is possible, however it needs some further research. The field titles wording, in the area of engineering and technologies of the Russian higher vocational training system at least, is substantially thought over and justified, but not similar to foreign analogue titles.

6. Under the competitive chasing applicants seeking admission, higher schools continuously open new courses on "fashionable" fields and majors/specialties within the existing Specification List and pose a question on including new educational programs into it that will lead to full unrecognizability of the education contents, as it happened in higher schools of Germany. Hence, the challenge to integrate (tangible diminishing) of the higher vocational training educational programs cannot be met at the expense of higher schools "reasonability". That requires some resolution "from above" at the level of the new generation state educational standards.

7. A significant part of Russia higher vocational training fields is not subject to modifications, and it is particularly reasonable to bring overseas higher schools updated educational programs to it. That is, the converging process should: take into account a possible variety range; be of two-way character and justified; take into account advanced world-wide experience; keep and expand the basic purposes and functions of the higher vocational training systems activity in view of labor market changes, the state-scale and individual needs; promote flexibilities in curricula and their proper response to the needs of economy and labor market, since a higher scale of system-based approach in the fields titles and discipline-formation of the Russian higher vocational training system is traced.

8. It is expedient to propose the Russian higher

vocational training standard to the EU countries in the framework of the Bologna Concord, as basics for all-European higher vocational training standard development. In the course of development, the principles of title-forming could be defined, and consequently an appropriate translation to European languages will be determined. It is an extremely important task under the conditions of the economy globalization and transparency of the educational space.

9. It is necessary to develop compatible frame state standards for prior-graduate, graduate, post-graduate and additional learning with the purpose of building up the "long-life education" system basics and multi-level efficient realization of learning programs in the field of engineering and technology, with special accent on foreign language learning and education internationality.

The above mentioned proposals and conclusions are not beyond the scope of the research bulk which have been carried out with reference to a limited number of higher schools, countries as well as the training fields. They do not apply as a generalization for the whole higher educational system in Russia and demand further research through expanding the research objects number, "immersing" into the contents of curricula and separate disciplines academic programs.

While carrying out a comparative research it would be possible to make notice of the following issues [2]:

- Principles of the higher education content differentiation in subject-cycles;
- Scopes of didactic units of the education contents;
- Degrees of up-to-date learning knowledge representation in the subjects content and its technological (applied) aspects;
- Sources of updating scientific and technological knowledge (domestic and foreign scripts, periodicals, reports on scientific research, patents,
- e-networks, etc.);

- Part and the purpose of the Humanities, mathematics and natural-science cycles of learning subjects;

- Representation of an interdisciplinary principle in the higher education contents;

- Ways (forms and methods) for estimating the appropriates (achievement) of the quality degrees stipulated by the standards;

- Key parameters for the learning process (scheduling the academic load factor ratio of practical vs. theoretical training; the ratio of lectures vs. students individual work; amount of course papers, tests and examinations; the amount, character and orientation of investigation and research activities, etc.).

References

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