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The Health Saving Principle in Modernizing the System of Higher Education

Abstract

The article presents a systematic analysis of higher education restructuring. The analysis begins by explaining the competence approach, which provides for implementation of the health saving principle. It outlines the topical problem in circumstances where the health of the growing generation is worsening as a consequence of a difficult demographic situation.

Keywords: competence approach, professional and personal development, health, health saving, holistic health.

Introduction

At present a negative dynamic remains in the health condition of children and youth. From the first grade of school the number of students with disabilities in health has increased five times over. Only 7–15% of students graduating high school are healthy, almost half of them are marked with morph functional variations, and about 40% of these graduates have chronic illnesses.

The low level of student health is alarming. Every year about 70% of entrants at different universities have some kind of health condition, and during their stud-

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ies at universities, students further deteriorate in health, a consequence of both objective and subjective reasons (mostly unhealthy lifestyles).

Higher education today is characterized by several trends not conducive to preservation and health promotion, increasing the reserve capacity of a young body, and increasing its defense capability. These trends include a heavy deficit of physical activity (hypo kinesis, and as a consequence a hypo dynamic phenomenon), lack of full, active, health-improving recreation (passive leisure time, or entertainment not conducive to a robust form); a mismatch of imposed loads to individual abilities of trainees, frequent overloading, fatigue, reduced activity of students in learning activities; and retardation of physical and mental development, which exists along with the phenomenon of acceleration. There is insufficient attention to student health maintenance, no valeological (health saving) approach and sanitation requirements within the educational process [1].

The introduction of the competence approach in higher education involves overcoming the alienation of theory from practice and knowledge from competencies. The growth of information and number of subjects have significantly lengthened the duration of a studies program and, thus, alienated a specialist from his direct job. As a result, higher education must now choose between 1) reducing the duration of studies; and 2) basing itself on innovative technologies and abandoning the objectcentered approach, revising curricula and training programs; and 3) while reducing the duration of studies introduce multi-systems and new educational technologies.

The competence approach inevitably initiates a new student-centered orientation of the educational process; the system transforms its values and goals. In the competence model of educational standards and the educational process, the objective is seen as an expected result and at the same time as a social order. In other words, the competence approach expands the range of goal-setting subjects — which are mainly state, societal and global community goals — through international regulations as well as through social partners, including employers, the academic community and students [7]. In addition, the competence approach may be specified as a number of competencies, one of which is health saving competence. Mankind has realized that education at any cost, generously paid with students' health, has no future.

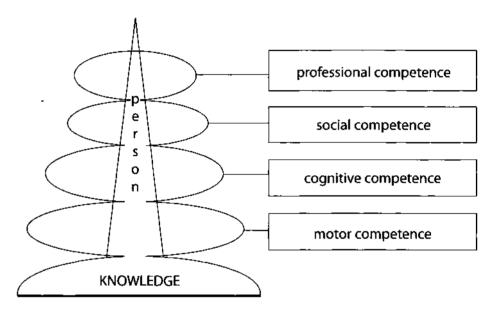
Competence format of higher education

The Educational Standard of Higher Education of the Republic of Belarus defines restructuring as a priority of the national education system. It does not limit creativity, but rather initiates, according to the "domino effect", a search of new conceptual grounds for the development of university programs, implementation

of innovative technologies, and retraining. The specifics of the second-generation standard lies in the competence of its format. The competence approach to designing educational standards is commonly understood as a method for simulating the results of education and their representation as quality standards [3, 6, 7]. In this case the result of education and professional training respectively are knowledge and competence. By definition, it is D. Kuhn competence – the general level of ability or skill demonstrated by this man [4].

Based on an analysis of interdisciplinary work on the competence approach, we propose the following model of competence [5], which enables the details of the concept of "competence" and also classifies it in a hierarchical structure from different kinds of competences. The model is a "pyramid", where knowledge serves as its base, and the individual serves as its core (backbone factor) (Fig. 1).

Figure 1. The hierarchical model of competence



Formation of competence has a hierarchical nature because this process can be carried out both horizontally and vertically: horizontally as the acquisition of variable skills, vertically according to the bottom-up approach by which we form motor skills. Due to such teaching a student performs a certain operation, but canno the explain how he does it; the next step is "I do and understand" (cognitive competence); then I do and understand as a team (social competence). The top-down approach involves the formation of competence through so-called procedural knowledge to skills, from

theory to practice. Sometimes the awareness of motor skills may lead to temporary loss or inefficiency. For example, if a high-class typist focuses on the location of keys at the cost of losing momentum, he begins to doubt his qualification.

The top of the "pyramid" forms a special (professional) competence. It is the ultimate goal of training and at the same time it integrates the motor, cognitive and social competences.

Higher learning establishments solve two interrelated problems in the process of specialist training: the current one (teaching students general scientific and professional disciplines), and the prospective or prolonged one (the formation of professional skills and competences). However, despite the universal recognition of unifying the principles of theory and practice, the problem of their integration remains urgent.

The relation in the medieval system of "master-apprentice-disciple" can be considered as an ideal integration of theory and practice. There is no gap between the mastery of declarative and procedural knowledge, and, in general, between knowledge and the competence approach. To become a master, a student at first works as an apprentice, and then creates his masterpiece. A masterpiece is not only objectified knowledge (facts and rules), but also evidence of the presence of professional qualifications and competence.

Of course, the modern system of higher education cannot be organized as a model for simply reproducting a particular experience. However, the variant and invariant presence of the theoretical and practical modules, the combination of individual and collective forms of learning and professional activity, now take place in higher learning establishments.

Student centered concept of education

Thanks to the competence paradigm, students are the direct subjects of the educational process. This approach shifts the emphasis from teaching as the main activity on learning to the educational activities of students themselves [2].

According to G.T. Roos, today even workers should become universal specialists who possess "a portfolio of competencies", who have versatile abilities which are based on their own talents and original combinations of practical experiences [7]. For a specialist, it is not enough to carry out a job; he should be able to solve problems, think critically, and possess a sufficient level of autonomy and market responsibility. So, there is a need to change the curriculum – the goal of education and training – based on the format of competence and expertise in higher learning establishments.

The competence approach should focus on the student-centered character of the educational process with the obligatory use of a system of credits and module technologies. European standards permit a broad interpretation of modularization – from the definition of the module as a separate unit of didactics (lecture topics) to the complex knowledge domain with its interdisciplinary elements. In any case, the module is tightly coupled to the end result to ensure that the student "must know" and "should be able to."

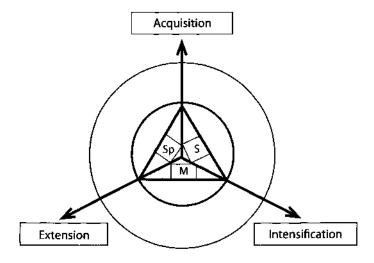
A consequence of introducing modular technology is the abandonment of a subject-centered curricula and training programs. The modular format requires a structural hierarchy of disciplines and integrated courses. This integration must be systemic and nature-conformable. Otherwise, its result will be an unsustainable centaur of science. The specific choice of system modules, as well as a competence model as a whole, depends on the influence of "the effect of the country" and "the effect of the specialty". They cannot simply be borrowed. Research teams must take part to bind a modular technology to the conditions of a particular university.

The following modules are outlined: the basic and supporting module, organizational and communication skills modules, and specialized and portable (applied) modules.

We offer a graphical model of a modular curriculum structuration, based on the position of a science at its core and on its periphery (Fig. 2). The specialty core consists of three modules: main (M), specialized (Sp) and supporting (S).

The main module is a group of objects that make up the backbone of the specialty factor (science). For example, for a degree in educational psychology: educational psychology, methods of teaching psychology, general psychology, and developmental psychology.

Fig. 2. The modular model of curriculum structuration



Supporting modules are subject areas, which complement the main module. For educational psychology these are experimental psychology, methodology of scientific research, and information technology.

A specialized unit is a set of disciplines (specialized and non-core, plus electives), which provides a more narrow specialization within the specialty. For example, there would be educational psychology, music psychology, and psychology of the gifted.

The deductive approach to the structuring of curricula and programs, of allowing priority of knowledge over competencies, is characterized for all three modules.

Modules of organizational and communication skills (the inner circle in the scheme) are the subject area, and provide students with the ability to work as a team, to learn, and to educate themselves (training effectiveness of pedagogical interaction, foreign languages, rhetoric and cultural studies).

Applied or portable units (the outer circle in the scheme) are the set of courses that develop skills and building competencies required for implementing theoretical principles into practical fields (psychology of professional orientation, psychodiagnostics and psycho-correction).

Competencies dominate over knowledge within the final modules.

As you see, the model is an open system based on the principle of "education through life" as the acquisition, expansion and deepening of knowledge and competencies. [Modularization correlated and the respective competences of young Europeans]: learn to find out, learn to learn, learn to live together and learn how to live.

Competence approach and the principle of health saving

Implementation of the competence approach in the structure of higher education is realized through a system of competencies in the context of innovation (credit-modular and modular-rating) technology. Innovative educational technologies involve the formation of health saving competence. They should be health saving in the broadest sense, to exclude any negative impact of the educational process on the state of students' health.

We base the holistic health [8] approach on the recognition of the natural state of health, which refers to life (and training) in harmony with oneself, society and nature. Man is a complex living system whose livelihood is carried out on biological, psychological and social levels of functioning. The contribution of biological and environmental factors on the development of behavioral effects is noteworthy: firstly, the influence of a child's personal characteristics prevails over parental influence, and secondly, there is a biological predisposition to certain psychopathologically behavioral or emotional disorders, and thirdly, the influence of

the child's environment is mediated by cognitive and emotional processes which, as a result of development, depend on the properties of neurophysiologic systems (systems that controll the emotions and behavior of a given individual [9].

According to the World Health Organization, the most common health disorders are emotional disorders, behavioral problems, lowered academic achievement and problems of adaptation and self-actualization.

On this basis we conclude that psychological monitoring of training is necessary to carry out on the cognitive, emotional and behavioral levels. We tested students on innovative technologies, at the end of the first year of training (before the impact, under the traditional system of training) and at the end of the second year (after the impact, in terms of educational experiment).

There is personal and cognitive development of students according to R. Kettel's 16-factor questionnaire scale. Significant differences were found statistically. Differences were found in seven of the 16 test factors: emotional stability, prudence, stability and practicality; insight and regulation of behavior; responsibility, flexibility of behavior; and critical, independent decision-making [2].

Scale	Factor	Т	P-level
С.	Emotional stability	496.0	0.03
F	Judiciousness	363.5	0.03
ī	Emotional stability and practicality	388.0	0.03
N	Insight and behavior regulation	386.5	0.02
0	Compulsion (responsibility)	350.5	0.01
Q,	Behavior flexibility and criticality	401.0	0.01
0	Autonomy of decision-making	504.0	0.04

Table 1. The dynamics of personal indicators of students

In other words, learning based on innovative educational technologies increases the efficiency of professional growth and maintains mental and psychological health, thus contributing to emotional and cognitive development.

Conclusion

What do we have as a result? At the beginning: a new educational standard, fashioned after the competence format. As a result: knowledge and competence. All interested in the reorganization of higher education stakeholders are identified: students, teachers and employers. A hierarchical model of competence, a modular model of curricular structuration, and training programs are proposed.

Innovative educational technologies based on the competence approach are theoretically justified and empirically confirmed. Moreover they form a distinct modus vivendi (way of life, a mode of existence) of the educational process whereby subjects also comply with the health-saving principle. These technologies solve the problem of directly improving professional training and while implicitly (but purposefully) retaining the mental and psychological health of students.

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