Organization of the Training Process Based on Modular and Rating Technology at Higher Educational Institution

Organización del proceso de capacitación basado en tecnología modular y de calificación en una institución de educación superior

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ABSTRACT:

The article deals with the organization of the training process based on modular and rating technology at higher educational institution. Modular and rating technology is seen as a powerful tool, which can be used for objective assessment of the acquired knowledge, skills and qualities of the student. The rating system allows to intensify the work of the student and make It is more even qualitative throughout the term within all the disciplines. The objective function of the modular and rating technology is not only improving the quality of students' knowledge, but ensuring the objectivity and reliability of the assessment.
Keywords: modular and rating technology, educational process, evaluation, students, higher school

RESUMEN:

En el artículo se muestra la organización del proceso educativo en la escuela superior en la base de la tecnología de módulo y de rating. El sistema del rating se examina como el instrumento potente, con la ayuda de lo cual es posible no sólo valorar más objetivamente los conocimientos recibidos y los hábitos, sino también las cualidades personales del estudiante. El sistema del rating permite activar considerablemente el trabajo del estudiante y hacerlo más regular durante todo el semestre en todas las disciplinas. La función de la tecnología educativa de módulo y de rating es tanto el aumento de la cualidad de los conocimientos de los estudiantes como el mantenimiento de la objetividad y de la veracidad de la valoración.
Palabras clave: la tecnología de módulo y de rating, el proceso educativo, la valoración, los estudiantes, la escuela superior

1. Introduction

Today the issue of changes within the educational process is to reform the education system. The educational process is an open self-organizing system in the context of globalization and it is characterized by the flexibility of the organizational form, content, means and methods of teaching, openness in the cognitive and social and emotional spheres. The educational process requires appropriate management (Akkoyun O., 2017; Drossel K. et.al., 2017; Galustyan O.V. 2015, 2017; Kansaart P. et.al., 2017; Komarova E.P. et.al., 2017; Padilla-Angulo L., 2017; Stosic L. and Stosic I., 2013; Uryadova T. et.al., 2017; Villarreal J.L. et.al., 2016). Management of the educational process is based modular and rating technology. Modular and rating technology allows to optimize the training process simultaneously, to ensure its integrity of the implementation of training goals, to combine the rigid management of the cognitive activity of students within the development of his/her personal sphere.

Analyzing understanding educational process in modern scientific research (Ferrante F., 2017; Gal B. et.al., 2017; Dragolea L. et.al., 2017; Lang C. et.al., 2017; Lombardi D. et.al., 2018; Matteucci M. C. and Helker K., 2018; Owens D. C. et.al., 2017; Patel R. V. et.al., 2018; Villarreal J.L. et.al., 2016), we conclude that modular and rating technology has arisen as an alternative teaching technology. It is based on the positions of an active, flexible views of pedagogical progress and is opposed to traditional learning, in which the inflexible standards of teaching content prevail, the students are pettily regulated, and they find it difficult to apply knowledge in practice.

Modular and rating technology is based on the synthesis of two interrelated technologies such as modular training and a rating system for monitoring and evaluating knowledge.

Analysis of scientific and pedagogical literature (Bunăiau C.M. and Stoian, A. C., 2017; Duers L. E. 2017) makes it possible to assume, that the most commonly used definition of modular and rating technology is the organization of the educational process, in which educational information is divided into modules, relatively complete and independent units, parts of information.

The essence of modular and rating technology is that a trainee can work with the individual curriculum, which includes a bank of information and methodological guidance. The goal of modular and rating technology is to provide flexibility, adaptation to the individual needs of the students and the level of their basic training. The aim of the instructor is to motivate, to organize, to advise, to supervise, to evaluate the students within the process of modular and rating technology (Galustyan O.V. et.al., 2017; Hawe E. and Dixon H., 2017).

The main element of modular and rating technology is the concept of "module". This is a logically completed independent block of educational information. Each unit has certain goals and objectives and is accompanied with evaluation of the knowledge and skills of the students.

The module contains cognitive, educational and professional components. Cognitive and educational components form theoretical knowledge. Professional component forms professional skills and skills based on acquired knowledge. The ratio of the theoretical and practical parts should be optimal.

Each module is provided with the necessary didactic and methodological materials, a list of basic concepts, skills and abilities that must be learned within the course of training. It serves as the basis for the drafting of the preliminary control program, which can be carried out in the form of written work or computer programs. Due to it every student has an opportunity to find out the level of his/her knowledge, to receive recommendations on additional study of certain questions. Each student moves from module to module when the material is learned. Students have to pass the stages of the current monitoring.

Systematic analysis and deep methodical study of the content and structure of the discipline are necessary to develop the entire set of modules, which necessary amount of knowledge, skills and abilities of the students provide.

2. Methodology

The purpose of module development is structuring of the content of the course or each topic

of the course into the components in accordance to the professional, pedagogical (didactic), educational and developmental tasks. Structuring a module helps to identify suitable types and forms of training for all components, harmonizing them in time, and integrating in a single complex (Lombardi D. et.al., 2018; Matteucci M. C. and Helker K., 2018; Owens D. C. et.al., 2017; Patel R. V. et.al., 2018). The training module is an integration of various types and forms of learning, which helps to unite general theme of the training course and an actual scientific problem.

Modular and rating technology provides a process when a student is almost entirely able to work independently with the individual curriculum offered to him/her, which includes a targeted plan of action (activities), a bank of information and a methodical guide for achieving a set of didactic goals.

Modular and rating technology provides individualization of instruction in content, rate of assimilation, level of independence, methods and methods of instruction, methods of control and self-control. This technology can be applied at university, both for the whole discipline, for some sections of the discipline, for special course, and for elective course. A teacher has to design this technology due to the certain discipline in order to apply modular and rating technology within the educational process (Gal B. et.al., 2017; Dragolea L. et.al., 2017; Matteucci M. C. and Helker K., 2018; Owens D. C. et.al., 2017; Patel R. V. et.al., 2018).

Modular and rating technology has such fundamental differences from other technologies as:

1. The content of training is represented in completed independent complexes (modules), the assimilation of which is carried out in accordance to the stated goal. The goal is formed for the learner and has an indication not only of the volume of the studied content, but also of the level of its assimilation. In addition, a student can get an advice from a teacher how to act rationally.

2. The form of evaluation of students' knowledge can be implemented through the rating of the students, which contributes to the implementation of the process of individual learning and competitiveness between them.

3. Individual counseling and assistance for the students are carried out.

4. A student determines the specific goals of the educational and cognitive activity in the process of working with the module independently and learns ways to achieve them. Such ways are independent planning, self-organization, self-control and critical self-evaluation.

Scientists (Galustyan O.V. et.al., 2017; Tchoshanov M. et.al., 2017) note that teachers can use their time more efficiently as they pay more attention to stimulation, motivation for learning, personal contacts within the learning process using modular and rating technology within the educational process.

Rating system for monitoring and evaluating knowledge of students is an important component of the modular and rating technology.

Subjectivity of evaluation of knowledge using traditional methods doesn't allow to make realistic and effective decisions concerning didactic process and the ways to improve it.

Tchoshanov M. (1997) notes that the traditional system of monitoring and assessment of knowledge has a significant drawback, which is that all the" threads "of control and management are in the hands of teachers. This fact deprives the student of initiative, independence and competitiveness within the learning process.

The rating system for monitoring and evaluating students' knowledge can eliminate these shortcomings. The main feature of the rating system is to transfer the control functions from teacher to students.

The rating system consists in accumulating students' marks for various types of work such as answers to questions, performing practical and creative works, preparing presentations, etc. during the term. This mark scale reflects current position of the student's knowledge among the students of the group and in comparison, to their previous results. Rating is formed by summing up the results of the current activity of each student within each discipline.

3. Results

Galustyan O.V. (2017) notes that modular and rating technology is based on teaching, educational, diagnostic, developing, and motivational functions.

Teaching function allows the teachers to determine the level of knowledge and disadvantages in their training.

Educational function contributes to the formation of responsibility, discipline, independence and other personal and professionally significant qualities.

Diagnostic function is manifested in objective assessment of knowledge of students in all cycles of academic disciplines. It helps to determine the reasons of difficulties in study of some students. It also helps to master teaching material. In other words, modular and rating technology serves as a diagnostic tool in this case. It establishes the strengths and weaknesses of the student's progress and development, their reasons and outlines the ways of successful training and of the intensive development of mental abilities.

Developing function denotes that a teacher can track the level of mental development of the students, their successes or drawbacks in this development. Features of perception, types and processes of memory, development of mental activity, speech, and imagination should be considered. This makes it possible to take into account the individual characteristics of the development of cognitive activity and to achieve good performance of each.

Motivational function is aimed at encouraging students to continue their academic work and deepening their knowledge independently. Teachers don't only ascertain the level of knowledge, abilities and skills of students, but also direct them within their educational work, give an additional motivation for cognitive activity while assessing the knowledge of the students.

Rating is an individual student's educational achievement index, which is obtained by collecting scores from the result of current, intermediate or final evaluation of students' knowledge. Each type of evaluation of students' knowledge gives certain percentage in the overall assessment of the student's knowledge. For example, it might look like this:

- current type of evaluation gives from 30 to 35% of the total maximum score;

- intermediate type of evaluation gives from 20 to25%;

- practical training and term papers gives up to 25%;

- the final type of evaluation (examination in the form of testing) gives 20%.

Different rating classification can be used in different modifications of the knowledge assessment system that depends on the type of evaluation.

Final rating of the students is counted while it is taken into account such activities as participation at scientific research, scientific and practical conferences, competitions of scientific works, etc. It is important to mention that the rating scale should be known as well as to the teacher and to the students.

4. Conclusions

Resuming the results of the theoretical study we conclude that using modular and rating technology of monitoring and assessment of knowledge allows to develop initiative, discipline and desire to take a higher place in the ranking in the process of studying the academic discipline. It also gives the opportunity to consider the individual qualities of students, to develop individual rates of study of educational material, to receive, to accumulate and to provide reliable information concerning the level of knowledge of the students for a certain period. While using computer techniques in the learning process, modular and rating technology regulates the educational process in accordance to the objectives and considering its results at a controlled stage. Organization of the training process based on modular and rating technology is aimed at choosing level and direction of preparation of the students in accordance to their abilities and inclinations. The number of training modules is determined by volume and complexity of the studied discipline. Thus,

organization of the training process based on modular and rating technology contributes to the implementation of an individual trajectory of professional development of the future specialists, allowing them to satisfy their interests in this field, choosing the pace of studying the material.

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