

Improving the Competence of Future Vocational Education Teachers based on Modular-Rating Education

Zuxra Karabaevna, Aynisa Musurmanova, Rustam Xamroevich

ANNOTATION- *The article discusses the role of the significance of innovative software and teaching in improvement of the efficiency of learning. And the article discusses ways of correcting the design, value and definition of innovative software and didactic systems of higher education, evaluation of knowledge of students on the basis of module-rating system, development of model of improvement of students' competence based on module-rating technology of training and definition of pedagogical conditions for its implementation, improvement of the methodological support for implementation of the model of improving competence based on module-rating system, Case-Problem-Method, Case-Incident-Method, based on indicators and criteria for determining the level of development of cognitive competence in future vocational education teachers organization of experimental works.*

Keywords: *information and communication technologies, innovative software, pedagogical conditions, methodological support, modular rating system, Case-problem method, Case-incident method, process, technology, innovation, information technology.*

I. INTRODUCTION

Experience of developed countries shows that competence is important in the professional development of future professionals. Ensuring quality education that meets the requirements of innovative development of society is one of the strategic goals of the country's educational policy.

Achievement of this goal is implementation of modules-rating of training of future vocational training teachers and technologies of "Interactive professionalism", modules "TEST VIEW", "TEST EDITOR", "TEST SERVER" within the program "TEST MASTER". It is necessary to expand the possibilities of modular-rating technology on the basis of modern information and communication tools, to ensure variability of modules for general professional and special disciplines, and to improve the evaluation system.

This is evidenced by the content of the Sorbonne Declaration, adopted by the European Union and UNESCO, the regional educational programs "IEARN" and "KIDLINK" of the University of Illinois (USA). Important changes in the content of training of future vocational education teachers, the effective introduction of module-rating system of training

through information and communication technologies, revision of methods and forms of improvement of their competence in teaching are one of the important pedagogical problems.

The module-rating system of evaluation of the results of training in higher education institutions in the direction of "Vocational education" and the level of students' professional knowledge is introduced on the basis of a competent approach in accordance with the rating plan of academic disciplines. The educational software and module-rating system of assessment require the introduction of the following basic principles of didactics: scientific, systematic, modular, consistent, visual, professional training.

Application of modular-rating technology of education in the professional formation of students in accordance with the priorities set forth in the Strategy of actions for further development of the Republic of Uzbekistan "Improving the system of continuous education, enhancing opportunities for quality education services, continuation of the policy of training highly qualified specialists in line with modern labor market needs"[1]

The extent of the problem studied

Problems of formation of cognitive competence of students and application of module-rating technologies of training in education, Reflected in the research of A.V Khutorsky and others. The introduction of a competence-based approach in education by prominent scholars of the Republic of Uzbekistan, including R.Kh. Dzshuraev, U.I.Inoyatov, Z.K.Ismailova, N.A. Muslimov, K.T.Olimov, A.R..Khodjabaev, Sh. .E..Kurbonov D.D Sharipova, Sh.S. Sharipov, J.A. Hamidov, DA Khimmataliev, OX Turakulov, as well as scientists from the Commonwealth of Independent States V.I. Andreev, A.M. Aronov, S.J. Batishev, V.I. Baidenko, VA Ermolenko, EF Zeer, GI Ibragimov, AM Novikov, AV Khutorsky, Yu.K. Babansky, Researches by V. Goldshmit, J. Russel and others [3].

Scientific and pedagogical bases of modular training and evaluation in vocational education K.T. Alimov, S.J.Ashurova, I.Otaboev, N.H.Avlyakulov, M.I. Daminov, Yu..K. , Studied by MA Choshanov, Yu..F.Timofeyeva and foreign scientists P.Yuttsyavichene, J.D.Russell, B.Goldschmidt, M.Goldschmidt, G.Owens [3].

II. THE MAIN PART

The main articles of the article cover the issues of competence and peculiarities of formation of future vocational education teachers in the process of professional education, its

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essence, content and structural constituents, current modular-rating technology of training. Problems of professional competence, introduction of modular-rating technology of training, and scientific and pedagogical bases are explained.

Pedagogical research shows that cognitive competence enables students to form professional and professional competences effectively. This means that the development of cognitive competence for future professionals is an important issue in modern education. A.V. Khutorsky in his classifications cognitive competence as the main competence directed at acquiring knowledge, mastering methods of cognitive activity, developing certain skills and skills in the learning process, creative thinking and independence.

In our view, **competence** - is not only the skills or professional skills of performing certain technological processes in the course of professional activity, but also a combination of professional knowledge and skills, skills, social ethics, teamwork, initiative [2].

The future professional education teacher is defined as the **competence of the teacher** of self-education, self-development, and professional development aimed at acquiring specific competencies that allow them to form the theoretical knowledge, practical skills and skills needed in the activities of a teacher of vocational training[9].

Module-rating learning technologies are widely used in international pedagogical practice and have been used in a number of institutions in the country since the 1990s. Module-rating based on the educational technology includes the modular principle of studying the subject, the active approach to the organization of independent work of students, the assessment of the acquired knowledge based on the rating system.

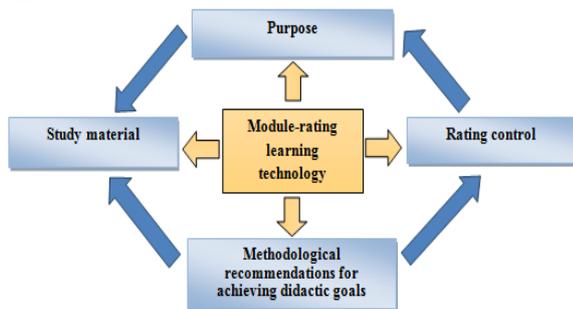


Figure 1. The structure of modular-rating training technology.

The essence of modular learning (the module is derived from the Latin word "module", which means measurement in Uzbek) is that the learner can independently study and work on an individual curriculum that includes teaching materials, data, and methodological guidelines. This will take into account individual interests and the level of initial training.

Indicators of improvement of cognitive competence were defined: knowledge of purpose and possibilities of its realization, ability to explain its purpose; formulate cognitive tasks and make assumptions; analysis of educational activity; independent learning; self-reflection in the learning activities (reflection); self-assessment in the learning activities; presenting the results of his research in oral and written form. Organizational-structural components of module-rating training technology include: modular working program, module training, module training materials[3].

The module-rating technology of training for improving the competence of future vocational education teachers will ensure the integrity of the education system aimed at improving the quality of education. One of its main elements is the system of rating control and evaluation of student achievements. Figure 1 shows the structure of module-rating learning technology.

The role of the teacher in the module-rating system of learning is invaluable. Organization of the learning process on the basis of module-rating technology allows the student to optimize his teaching time. The module-rating technology of learning allows students to acquire the skills of independent learning, self-control, goal setting and reflexive (self-analysis), which is an indicator of cognitive competence.

III. RESULTS & DISCUSSION

The module includes a section of a science or a set of definite major topics or interconnected concepts. The module is a logical unit of learning material designed to study one or more fundamental concepts of a subject. The purpose of the module-rating educational technology is to create conditions to encourage student independence.

The use of module-rating technology ensures that the student achieves specific goals of the cognitive activity while working with the module independently.

The module includes:

1. A work plan with specific goals.
2. Learning content intended for the student to master.
3. Methodological guidelines for achieving didactic goals.

The practical implementation of module-rating technology is closely linked to certain pedagogical conditions.

The first condition: teacher motivation.

The second condition is the students' willingness to pursue independent learning and cognitive activities with minimal knowledge and practical experience.

The third condition: the availability of material for multiplication of modules is effective when each student is provided with software.

The model for improving the competence of teachers of the future vocational education forms pedagogical tools, establishes various links between them, determines the order of their use and takes into account the dynamics and integrity of development [5].

The model for improving students' cognitive competence includes interdependent blocks (Figure 2).

The purpose block identifies the main areas of pedagogical activity, provides for the improvement of students' cognitive competence [8].

In the content block, the subject "Tractor and Vehicles" is divided into four modules: auto-tractor engines and fuel lubricants; the basics of theory and calculation of auto-tractor engines; construction of tractors and agricultural power tools; The basis of the theory and calculation of tractors and cars [11]. Forms, methods and tools of teaching were presented in the process unit.

Diagnostic-outcome block consists of defining and evaluating the level of improvement of students' cognitive competence.

The effectiveness of this model is provided by the following set of pedagogical conditions: 1) Theoretical training of teachers for the formation and improvement of students'

- competence; 2) organization of differentiated and individualized education;
3) organization of independent student education;
4) Involve students in design activities.

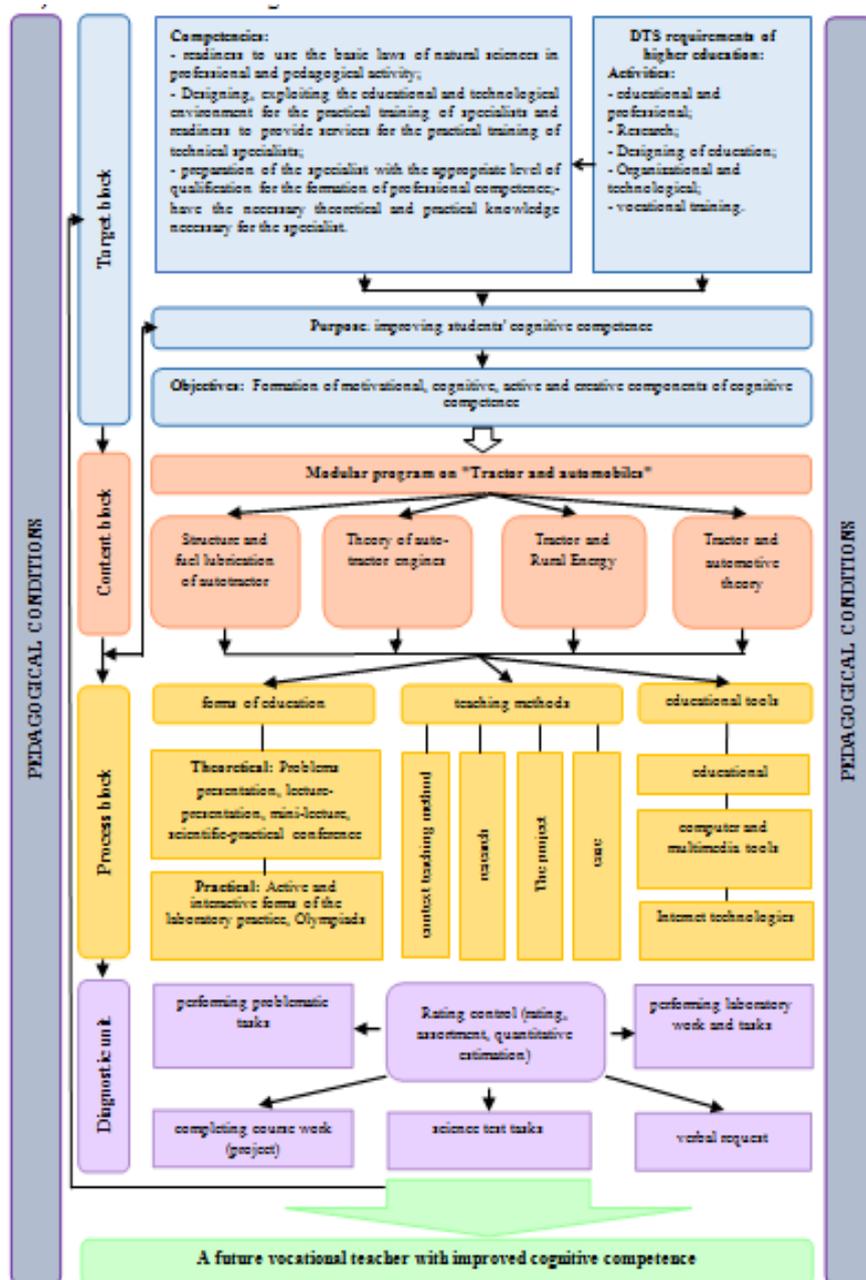


Figure 2. Model of improving students' cognitive competence based on modular-rating education [4]

IV. CONCLUSIONS

Methods of studying the module unit "Tractor and car lubrication system" on module "Tractors and cars" to determine the level of improvement of students' competence on the basis of module-rating educational technologies and rating control of students' knowledge and skills assessment. The method of quantitative estimation of performance and protection of final qualifying works is used, the results obtained are analyzed and students' competence (mastering) is used.) High.

The results of pedagogical researches showed that training and evaluation of modules on the specialty 5111000 - Vocational Education (5430100 - Agricultural Mechanization)

based on module-rating technology of general education (Methods of vocational training) and specialty (tractors and cars):[4]

First, the students were interested in getting a high score. As a result, their positive attitude towards science has increased significantly, their independent activities have intensified;

Secondly, pedagogical collaboration between teacher and student has been strengthened, which facilitated the monitoring of teacher and student knowledge;

Thirdly, the level of independence and creativity of students has increased, which has led to a positive attitude towards socio-economic and living conditions and a sense of self-confidence.

At the end of the experiment the results of experimental tests on improvement of the competence of the bachelor students 5111000 - Vocational Education on the basis of modular-rating technology are shown[10].

The Student-Fisher method was chosen for the mathematical-statistical analysis of this data.

the experimental modal values for the experimental and control groups were $MT = 5$ and $MH = 3$, respectively, meaning that the difference between them was sufficient and $MT > MH$. This, in turn, indicates that the mean values for these variables also satisfy the $X > Y$ condition. We calculate them according to the following formulas [7]:

$$\begin{aligned} \bar{X} &= \frac{1}{n} \sum_{i=1}^{n=3} n_i x_i = \frac{1}{45} (6 \cdot 5 + 31 \cdot 4 + 8 \cdot 3) \\ &= \frac{1}{45} (30 + 124 + 24) = \frac{178}{45} = 3,96 \end{aligned}$$

$$\begin{aligned} \bar{Y} &= \frac{1}{n} \sum_{i=1}^{n=3} n_i y_i = \frac{1}{62} (10 \cdot 5 + 25 \cdot 4 + 27 \cdot 3) \\ &= \frac{1}{62} (50 + 100 + 81) = \frac{231}{62} = 3,73 \end{aligned}$$

Based on the above results, we calculate the quality of the experimental work.

We know $\bar{X} = 3,96$ $\bar{Y} = 3,73$ $\Delta_H = 0,07$ $\Delta_m = 0,05$ is equal to. More quality indicators

$$K_{\acute{o}\grave{n}\acute{a}} = \frac{\bar{X} - \Delta_m}{\bar{Y} + \Delta_H} = \frac{3,96 - 0,05}{3,73 + 0,07} = \frac{3,91}{3,66} = 1,07 > 1$$

$$\begin{aligned} K_{\acute{a}\acute{a}\acute{a}} &= (\bar{X} - \Delta_m) - (\bar{Y} - \Delta_H) \\ &= (3,96 - 0,05) - (3,73 - 0,07) \\ &= 3,91 - 3,66 = 0,25 > 0 \end{aligned}$$

From the results we can see that the criteria for evaluating the effectiveness of teaching on the basis of module-rating learning technology is one and the level of knowledge evaluation is zero. The analysis shows that the results of the experimental group were higher than the control group. This shows the effectiveness of the research.

We recommend that the conclusions and recommendations adopted continue to be addressed in the following areas:

- development of differential and individual approach to the improvement of cognitive competence of future vocational education teachers on the basis of modular-rating educational technology, as well as improvement of electronic resources intended for more effective organization and implementation of educational process;

CONCLUSION

- Development of a differential approach to teaching and evaluation of professional and specialty modules in the study of innovative pedagogical conditions and improvement of the competence of future professional education teachers on the basis of modular-rating training technology.

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