IMPLEMENTATION OF QR-TECHNOLOGY IN ACADEMIC PROCESS OF MANAGEMENT-EDUCATION

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The article is devoted to the essential and substantial aspects of the implementation of QR-technology in modern management-education. The authors disclose the features of the implementation of QR-technology as an interactive educational technology in the classroom work, which provides activation and intensification of the academic process in the conditions of Russian education modernization. Highlights of the organization of educational QR-quest and final evaluation system of its passage are described. The authors conclude that the use of QR-quests as a new form of educational process organization should be seen as a key condition for improving the quality of management-education, reducing the load of students, more effective use of learning time.

Keywords: QR-technology, quest, management-education, academic process

Education is very important in solving nationwide problems. One of the main priorities in the implementation of educational standards of higher education within the competence approach is to develop students' general-cultural, general- professional and professional competencies, such as:

– ability to abstract thinking, analysis, synthesis;

– willingness to act in unusual situations;

– willingness to self-development, self-realization, the use of creative potential;

– willingness to manage a team in their professional activities, tolerant to perceive social, ethnic, religious and cultural differences;

– ability to develop training programs and methodical maintenance of management disciplines, as well as the use of modern methods and techniques in the process of teaching, etc. [3, 7].

In the current conditions of Russian education modernization, when the emphasis shifted from «acquisition of knowledge» on the formation of «competencies», takes place a reorientation to a humanistic approach in learning and introduction of innovative educational technologies, providing accounting and the development of the individual characteristics of students [3]. Traditional educational technologies, when reproductive methods of teaching are predominant, do not give the results that planned in the theory of Russian education modernization.

One of the requirements of modern management-education is the widespread use of active learning methods. Thus, the implementation of bachelor programs not less than 30 % of classroom teaching should be conducted in the interactive form, and the implementation of Master programs – not less than 50 % [8, 27]. Under these conditions, in the university should be provided for the use of innovative educational technologies, developing teamwork skills, interpersonal communication, decision making, leadership qualities.

The use of innovative educational technologies orients of teacher to create such forms of organization of learning activities in which the emphasis is on learning and cognitive activity of student, on the formation of systemic thinking and the ability to generate ideas for solving creative problems [6, 44]. Increasing the diversity of educational technology becomes an essential requirement and at the same time the result of the implementation of the formation of a competent professional.

In the information society the teacher ceases to be the sole bearer of knowledge. Therefore, the choice of forms and methods of training in academic process of management-education must be focused on competence-based approach [4, 29]. This approach involves a more extensive use of interactive teaching methods, which provide a high degree of involvement of students in the learning process and are today one of the criteria of quality educational programs.

Interactive teaching methods involve co-learning – collective learning in collaboration. The teacher plays the role of the organizer of the learning process, the creator of conditions for the initiative of students [7, 87]. Also, interactive learning is based on the direct interaction of students, which have their experiences (joint development of solutions, work towards a common goal, discuss the results, mutual consultation and evaluation, etc.) [5]. On the basis of this experience, new knowledge and skills are formed.

For complex formation and development of competences, which are provided by the goals and objectives of a particular discipline,

it is appropriate to organize the work of students in subgroups (teams) as a way to increase the level of classroom teaching's interactivity [2, 71]. In this context, the QR-technology is a relatively new interactive teaching method, which is used in modern management-education programs. For the implementation this technology a special organization of the collective work of students, which activates their cognitive and creative activities in solving the problems, is required.

QR-technology is based on the application in the educational process of QR-quest – a form of introduction in management-education augmented reality, which is an interactive game. In this quest clues and riddles are encoded in QR-codes.

QR-code (quick response) – a matrix code (two-dimensional barcode), which was designed by the Japanese company «Denso-Wave» in 1994. Besides trading, manufacturing, logistics, tourism and other fields, is now the GR code is used in education. Interactivity of QR-technology manifests itself in a constant interaction between students and teacher by direct and feedback connections, free exchange of opinions on ways of solving the problem, which is put in an educational QR-quest.

Educational QR-quest can be online and offline. In the online QR-quest, students must move along Internet sites in search of GH codes. In the offline QR-quest students must physically move in the building of the university in search of QR-codes. The outcome of the educational QR-quest can be:

– the answer to the question;

– a final destination, that was encrypted;

– a subject, that was hidden.

As a rule, educational QR-quest is based on the type of linear quest, in which teams must be under time limit to pass as many stations and to answer the questions that are encrypted in QR-codes. For the passage of educational QR-quest learning group is divided into subgroups (teams) depending of the total number of students (optimal subgroup consists of 4-8 students).

Formation of commands can be performed:

– on request of the participants of the quest (depending on the personal qualities of students, as well as group phenomena, such as friendship, enmity, competition, etc.);

– by the discretion of the teacher;

– random way (for example, by drawing lots).

It should be noted that the formation of the teams with the help of the latter two methods is the most desirable, because participants need to "work together" – it brings learning environment to real life situations.

For the educational QR-quest required:

1. Tablet computer (notebook, netbook, mobile phone) with installed software decoder and presentation for marks in the form of photos.

2. Map with stations – the name of the station may simply be an ordinal number, or may reflect the lecture topic or subject area, if educational QR-quest is intersubject.

3. Assignments stations (QR-codes).

4. Worksheet for recording the responses.

First, it is necessary to instruct of students – to explain the rules of the educational QR-quest, rules of the work with decoder and webcam, rules of photographing, and to carry out trial decoding and photographing.

Teams should not disturb each other during the passage of the route. So the first station, which begins an educational QR-quest, different for all the teams, and then the teams pass point-station in order.

Time of educational QR-quests are usually limited to 2 academic hours, during which the teams have to perform as many tasks as possible (to pass as much points of stations as possible). At each station the team should be read QR-code, answer the question and record the answer in the worksheet, as well as take a photo of the group on the background of the station and to place it on the corresponding slide of presentation.

In simplified form evaluation system can be represented as follows:

– for each station traveled team gets 1 point (subject to availability of the team photo on the background of the station);

– for the correct answer – from 1 to 2 points;

– for a wrong answer – 0 points;

– for the lack of response (assuming completion of this station) – 1 penalty point;

– for being late at the finish – 1 penalty point for every 5 minutes late.

Experience in organizing of QR-quests in the educational process of the Chair «Management» (Volgograd State University) shows that students gain skills of distribution functions for the implementation of common objectives, development of joint solutions, mutual assistance. This is an integral component of highly competence modern specialist. The implementation of QR-technology as an indispensable and essential component of modern educational technologies requires special knowledge and practical approaches from the organizers of educational process. In this regard there is

an objective necessity of professional development of the teaching staff in the use of interactive educational technology in academic process with the exchange of experiences.

Thus, in the conditions of competence-based approach, the role of educational technologies, which are based on the use of active and interactive learning methods, is increased. Implementation of QR-technology provides a significant approximation of the academic process to the practical professional activity at a high degree of student's motivation, promotes better assimilation of the studied material, and increases the effectiveness of the educational process as a whole. Passage of educational QR-quests activates the thinking of students, develops the cognitive and creative activities, allows to form and evaluate the professional competences, especially in the organization and implementation of teamwork.

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