

RATING BASED EVALUATION OF STUDENTS' KNOWLEDGE AS A PART OF KNOWLEDGE QUALITY CONTROL SYSTEM IN THE CHILDREN'S DISEASE LEARNING COURSES

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Rating system for the evaluation of students' knowledge quality is a form of the continuous control of the educational process on the "Pediatrics" discipline. The system is required to achieve the manageability of the education process for both a teacher and a student. The rating includes three control blocks: theoretical, practical and organizational, and also allows to accumulate the results when taking into account all kinds of educational activity to calculate the final rating. The continuous and objective monitoring during the whole process of studying the discipline encourages students to regular and systematic educational activity during the lessons and in the form of independent studies and allows to use various forms of awards for the results. The following kinds of ratings are being used: current, boundary, semestrial, examination and a final rating. The introduction of the system resulted in increased number of "good" and "excellent" qualifications on the discipline.

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In the modern life higher education institutions are becoming increasingly dependent on the quality of their students' learning, as such institutions are affected by the fierce competition among them, by the feedback from the job market and employers' requirements, by their students' preferences towards more quality education and better experience valuable for the future employment and by the international students exchange programs. International Standards Organization defines quality (standard ISO-8402) as the set of characteristics of an entity that give that entity the ability to satisfy expressed and implicit needs [1].

The modern theory of knowledge management asserts that university's product is the knowledge received by a student. And this knowledge must not be in the form of written lectures' abstracts only, but must be the firm set of knowledge confirmed by the number of tests, exams and graduation qualifications taken by the student himself on practice. On the other side, the clients of the university are it's students first, then the society that delivered these students to receive the education, and in the end - the state that finances educational process [2].

With that being said the establishment of a properly documented knowledge quality control management system is a very impor-

tant task, but it's just the tip of the iceberg - the system must be used effectively and evolve constantly, and the regular monitoring of the students' knowledge and skills must be the central part of it [3]. One of the possible forms of such monitoring is the rating based system of students evaluation - the system for the educational process management on the pediatrics speciality. The system includes structuring of the contents of each educational subject and regular monitoring of the student's knowledge and skills using the current checks covering the single topic and the final check covering the whole branch of learning.

To give the student non-surgical knowledge and experience required to attend both healthy and ill children he is being taught the whole number of subjects: general child care, healthy child course, propaedeutics of children's diseases, children's diseases, children's infectious diseases, polyclinical pediatrics.

The preparation of students on the pediatrics discipline includes a number of classical educational resources (lectures, practical courses, exams), independent educational resources with teacher's supervision (supervised independent process), unassisted self-reliant courses without the supervision (electronic and printed books, internet resources).

Organization and supply level of such resources is documented in the methodical materials developed on the basis of the general learning plan. To establish the monolithic approach to knowledge control, to increase the quality of education and to motivate students towards the constant work and improvement during the period of education it was necessary to introduce the rating based system - quantitative assessment of student's understanding of the learning material. The primary target of the system, including its universal approach, is to achieve the maintainability of the educational process for both a teacher and a student. It allows to accumulate results of the education as the final rat-

ing, taking all aspects of the learning process into account. It allows for the constant and objective monitoring throughout the whole process of learning the discipline, motivates students to work regularly both with teacher and independently, and also allows to use different ways of encouragement for the knowledge mastered.

In the course of pediatrics the following types of ratings are being used: current, boundary, semestrial, rated results of exam (test) and final rating. Maximum value for the each type of ratings is 100 points. Student's results are evaluated according to the following set of blocks (see table 1).

Table 1. Rating blocks used in the rating system of knowledge control

Block	Kind of work being rated	Target of the rating
Theoretical	All kinds of work	Theoretical knowledge of the discipline
Practical	The level of practical knowledge and skills	Practical knowledge and skills
Organizational	Lectures, practices	Attendance level

The knowledge control in the current rating for the theoretical block is based on the initial and final control during the lesson.

Initial control evaluates the level of students' preparedness on the subject of the lesson. It is based on the questions and problems compiled from the previously available methodical materials for the practical lessons on the subject. These questions and problems do not require additional discussions or explanations and can be successfully solved using the autonomous educational resources.

Final control is based on the individual situation-based problem being given to every student for the written answer. Unlike the initial control, the final control must evaluate student's ability to apply his knowledge on the subject to the given situation - be it a diagnostic, differential diagnostic, medical or prophylactic one. Only after the thorough discussion of the patient, evaluation of the diagnostic importance of the results of additional examination and the discussion of the amount of treatment with regards to patient's

age and condition it is possible to solve the problem correctly.

Evaluation of knowledge in the practical block is based on the student's demonstration of his skills in the clinical examinations, reading the results of the laboratory tests, performing instrumental examination and a number of additional tasks (the full list of the required tasks to be mastered is documented in the "List of practical knowledge and skills" available for the students with their methodical materials). The evaluation is performed during the independent (but supervised by the teacher) examination of the healthy and ill children by the student with his following report in front of his class on children's condition and any detected indicators of the disease (conforming to the requirement of medical privacy, of course). Sometimes it is allowed to use excerpts from the child's history and his disease history (the full list of required skills and the structure of the practical lesson is also available in the

methodic recommendations for the practical lessons on the subject).

To the end of the practical lesson the rating is the average of the ratings received by the student for his theoretical and practical blocks. The final rating of all lessons can be calculated as the sum of all ratings divided by the total number of the lessons.

As the student progresses to the more advanced stages of the course, his current rating includes a number of additional evaluations, e.g. to confirm his skills in the proper documentation of the disease history, medical prescriptions, his ability to work independently on duty in the clinics. This is one of the possible forms of the supervised (in this case - by the clinics' on-duty personnel) independent work during the learning course on children's diseases. When the student reports on his results the following of his abilities can be evaluated:

1. to see the indicators in child's condition those require intervention;
2. to separate and define syndromes explaining the condition and to monitor their progress and dynamics;
3. to interview child's parents to receive any necessary information from them;
4. to prepare medical documentation on the patient;
5. to report on the patient to his colleagues.

Boundary rating also includes three control blocks: theoretical, practical and organizational.

Theoretical knowledge control is usually based on the sufficient amount of exams or tests (not less than 50) for the individual evaluation and interviews on the situational problems. Practical control block should display student's level of experience with the practical skills, the full list of which is available in the practical records book on every subject. Organizational block for each rating

is based on student's attendance level at the lectures and practical lessons, his timely completion of all necessary control points and resolution of unsuccessful tests, and should display the level of student's organization and discipline. This block can result in both positive and negative ratings.

Semestrial rating is a weighted sum of current and boundary ratings, with relative weights set by department's management. For the subjects those have a final exam in their learning schedules exam rating is also introduced, and being added to the semestrial rating it gives the final rating (on the subjects without the final exam the final rating is equal to the semestrial one). Final exam on any subject must consist of three stages: final test, demonstration of the practical skills and theoretical interview. Relative weights of these stages in the final rating are being set by the management's decision.

As any other technology, this system must be analyzed to determine its effectiveness. Results of the final state certification on the pediatrics discipline can be used as the preliminary indicator: in the course of the last two years the amount of "excellent" grades increased from 30% to 37%, and the amount of "good" grades increased from 46% to 53%. To get more significant and detailed analysis additional sociological studies are required, those are the subject of the next development stage of this technology.

References

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