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RELATIONSHIP BETWEEN DEVELOPMENT AND ASSESSMENT
OF STUDENTS' COMPETENCES

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Abstract

Modern approaches to teaching and assessing learning outcomes in the context of competence-based education encourage students to acquire maximum knowledge, skills and abilities. They are based on the idea of organizing the educational process geared to train students towards mastering a set of competences that develop a future specialist in demand on the labor market. The paper discusses the relationship between learning and assessment procedures based on the transparency of assessment criteria and clearly defined expectations. It reports a number of teaching and assessment methods for some basic biomedical and clinical disciplines within specialist program implemented at the Medical Institute of Chechen State University. The methods boost academic performance of university students, encouraging them to participate in active mental and practical activities. Based on the analysis of current regulations in the field of higher education, teaching and learning materials designed to improve educational efficiency were correlated. Assessment procedures based on innovative methods should ultimately be aimed at meeting the requirements of federal state educational standards, focused on learning outcomes conceived as competences shaped rather than on teaching practices. After all, new educational standards are based on fundamentally new approaches that imply moving away from a qualification image to a competence image of the graduate. The authors emphasize the need to transform the main functions of higher education from mastering the material into new achievements in education inspired by the practical experience at the Medical Institute of Chechen State University.

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1. Introduction

Teaching is a systematic guidance of students' learning and cognitive activities provided by the teacher. It involves determining teaching materials and its adequate volumes; forms, methods, and timeline; creating the best conditions for knowledge acquisition and diversified development; quality assurance (Grudzinskaya, 2013). A teacher dealing with competence-based technologies acts as an organizer of the learning process that must be constantly managed (Gorylev & Grudzinskaya, 2012). There is a gradual shift of responsibility for learning outcomes from the teacher to the student capable of adequate self-esteem in the face of an ever-increasing proportion of self-study (Shvets, 2012).

2. Problem Statement

A scoring system is currently recognized as the most effective tool to assess the achievement of learning outcomes by students mastering a study program (Levchenko, 2008). Many Russian universities now rely on this system, so does Chechen State University that is a higher education institution carrying out, as its wider objective, educational activities within university study programs and research activities. The university was founded for the implementation of educational, research, social and other non-profit functions (Isaeva, 2020).

In accordance with the scoring system adopted at the university, learning outcomes are assessed on a 1 to 100 grading scale. Positive results confirmed through course-level assessments allow students to get the credits assigned in accordance with the curriculum. A student's current score for a semester, as well as an exam score, are expressed in whole numbers, then converted into the national four-point grading system. The rating of students is built based on a 100-grade scoring system and, on its basis, students are assigned marks on the ECTS scale.

The federal state educational standard determines that upon mastering a specialist program, graduates must have mature general cultural, general professional and professional competences (Senashenko & Mednikova, 2014; Zimnyaya, 2003). Methods for assessing students' knowledge reflect the level of knowledge accumulated as a result of training, practical competences and learning outcomes within each discipline. Student assessment criteria are announced during the first class in each discipline, as well as on university web page where curricula are available.

3. Research Questions

Once admitted, each student receives a username and password, which allow access to the student's personal account. Via their personal accounts, students gain access to: their personal profiles, the timetable, current academic performance, results of progress check and intermediate assessment, as well as e-mails sent by their departments / deans, teachers and other users concerned. Based on the information provided, students can monitor their academic achievements and, if need be, make necessary decisions to improve the quality of knowledge. The e-library environment provides access to students' personal accounts from any point with free access to the Internet.

To ensure intermediate assessment, a number of methods are used, corresponding to specific objectives proposed for each discipline: assessment by tests, oral answer, written answers, submitted abstracts, portfolio, assessment of practical skills. Intermediate assessment is performed by testing, including on-line; conducting a comprehensive assessment through several stages; oral answer and others. To assess the level of mastery, real or standardized patients, training models, virtual programs are exploited.

4. Purpose of the Study

Continuous assessment of students' progress as well as intermediate and final assessments take various forms. This guarantees a multilateral assessment of the acquired knowledge and practical skills. Minor differences between grades obtained through different assessment methods, as well as between continuous and intermediate assessments, ensure that students have a sufficient level of mastery within a given discipline.

Another confirmation of the achieved learning outcomes and the implementation of curriculum within disciplines is the students' progression to the next year. Another fact to confirm that students have achieved the learning outcomes required within a relevant field of study, namely the formation of their general cultural, general professional and professional competences provided for in a particular study program, is the assessment of graduates' knowledge and skills via State final attestation.

5. Research Methods

Assessment of students' knowledge is integral to the process of collecting information on the degree and pattern of students' success towards the requirements for their future career as a doctor. Thus, to determine the level of learning outcomes achieved, the relationship is evaluated between competences and knowledge acquired during the learning process.

6. Findings

Let us consider the correlation of teaching and assessment methods to support disciplines within **31.05.01 Medicine** field of study (Table 1, 2).

Table 1. Core Biomedical Sciences

Core biomedical sciences	Year of study			Hours			Teaching and learning methods	Forms of assessment
	1	2	3	Lectures	Practicals	Labs		
Bioorganic chemistry (4 credits)	+			34	17	17	1. Passive 2. Active 3. Interactive 4. Self-study supervision	Recitation Research project Awareness-raising project Classroom discussion Test Review tests

Human physiology (8 credits)	+	70	140	-	1. Passive 2. Active 3. Interactive 4. Self-study supervision	Recitation Research project Awareness-raising project Classroom discussion Test Review tests
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Table 2. Clinical disciplines

Clinical disciplines	Courses						Hours		Teaching and learning methods	Forms of assessment
	1	2	3	4	5	6	Lectures	Practicals		
Psychiatry, medical psychology (5 credits)					+		36	54	1. Passive 2. Active 3. Interactive 4. Self-study supervision	Recitation, tests, case studies, grand rounds
Otorhinology (3 credits)				+			32	36	1. Passive 2. Active 3. Interactive 4. Self-study supervision	Recitation, tests, case studies

At the end of each semester, learning outcomes assessed against a set of criteria are analyzed at various levels (faculty meetings, Academic Councils). The outcomes achieved are highlighted in relevant minutes and annual reports. The proposals received during the discussion, students’ needs analysis and survey feedback, as well as the proposals of employers are used for improving the quality of education. At the end of the academic year, students are progressed to the next year.

Assessment procedures are aimed at testing the level of knowledge and practical skills, which determines the academic performance of each student within a relevant study program. Based on the results obtained, a student can independently assess his or her learning progress and align the learning process in accordance with the requirements of the program. Hence, a steady assessment requires constant learning, self-discipline and responsibility from students, eliminating the identified gaps.

Students who fail to score a sufficient number of points during continuous assessment are not allowed to take intermediate assessment and have a re-sit opportunity, which forces them to pay special attention to the lacking knowledge and expertise. In the unified e-learning system of Ucomplex University, students have access to monitor their academic performance.

Procedures and forms of knowledge assessment within study programs are strictly regulated by local documents. Assessment criteria are reflected in course syllabi and pools of assessment tools for disciplines and practices, as well as program and pools of assessment tools for State final attestation. During continuous assessments students get scores 1-100 in practical classes or seminars through various assessment means including oral conversations or written assignments, final tests, self-study assessment in the form of students’ portfolios or projects, assessment of medical history, assessment of practical skills. A detailed description of assessment activities is contained in course syllabi, pools of assessment tools and flowcharts.

Interim assessment takes place at the end of a course / practical training. The results are put into Ucomplex. Practical training is assessed both during and at the end in accordance with Regulations on Practical Training of Students Mastering HE Core Professional Study Programs. Continuous practical progress is generally assessed by a supervising university teacher and a supervising staff member of a company providing work placement. It is assessed whether students were involved in scheduled activities and developed skills for performing or coordinating activities within a corresponding practical training program. A score is accumulated based on students' performance characteristics provided by the supervising company member, results of individual assignment, and evaluation provided by the supervising university teacher.

The State final attestation includes a final examination aimed at the program-level assessment and conducted in accordance with the State Final Attestation of Graduates of Higher Education Institutions. Conducting a final exam in several stages makes it possible to assess the level of learning outcomes achieved, as well as general cultural, general professional and professional competences acquired by graduates during the study period. Students who have fully completed the curriculum are allowed to the State final attestation.

The forms of interim assessment are determined by the curriculum: pass/fail test, grading test, exam or state exam. The assessment strategy is specified by the learning outcomes within a study program and is aimed at determining / evaluating the acquired competences. It is developed by teachers and departments concerned jointly with university administration. Pass/fail test and grading test are taken by students in the last two weeks of the semester during classes. Exams – during exam sessions. The number of hours for the exam is determined in the curriculum.

At the end of each discipline, students can fill in a standard questionnaire in the Ucomplex system to determine the level of satisfaction. Regular opinion polls are held on various forms of assessment, the compliance and transparency of exam routine. The results of the polls are analyzed at faculty and Academic Council meetings of the Institute. They are assigned in annual reports of departments and dean's offices concerned. Corrective action is taken if necessary.

7. Conclusion

Finally, the educational process arranged in new conditions in no way rejects the achievements of higher education in the field of teaching, learning and assessment, but extends traditional boundaries and creates conditions for the development of all educational agents – both students and teachers.

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