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**METHODS OF PREPARATION OF STUDENTS  
TO SUMMATIVE ASSESSMENT**

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**МЕТОДИ ПІДГОТОВКИ СТУДЕНТІВ  
ДО ЗАКЛЮЧНОГО ОЦІНЮВАННЯ**

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**Abstract.** To compare the quality of knowledge obtained at the classroom and summative assessment dental students were divided into three groups according to familiarization with tests. High outcomes of students who had tests with right answers to control module do not allow objectively assess their level. It is necessary to familiarize students with conclusion tests each lesson because data of classroom assessment motivate students to prepare every day and can identify teaching and learning methods that need to be changed or developed.

**Резюме.** Для того, щоб порівняти якість знань, отриманих при поточному та підсумковому оцінюванні, студенти-стоматологи були розділені на три групи згідно ознайомлення з тестами. Студенти, які мали тести з правильними відповідями до підсумкового контролю, отримали високі результати заключного контролю, що не дає можливості адекватно оцінювати рівень знань студентів. Найбільш доцільним є вирішення заключних тестів під час практичних занять за окремими темами, що мотивує студентів до щоденної підготовки та спонукає викладача до активної роботи із студентами.

**Introduction.** Presently assessments have been designed for teachers improving ability to estimate across many students. Modern assessment system has formative and summative components [1]. The purpose of summative assessment is to document or sum up, at a point in time how much learning has occurred [2]. If

assessment provides information to be used as feedback to modify the teaching and learning activities in which they are engaged it becomes formative. The goal of assessment in medical education is the development of reliable measurements of student performance which, as well as having predictive value for subsequent clinical competence, also have a formative, educational role [3].

There are many assessment strategies to measure the quality of knowledge, one of which is MCQs (multiple choice questions). In general MCQs are designed with a stem and a set of responses. MCQs can be implemented in three ways, one of which is such as single best option (a student is expected to select the best response from a range of 4-5 possible options). Case-based MCQs used by 39.5% of the dental institutions [4]. In Ukraine students often have test samples with right answers for preparation to control module as summative assessment. Aim of this study was to compare the quality of knowledge, obtained at the classroom and summative assessment, using MCQs tests on a sample of 547 students at dental medicine divided into three groups according to familiarization with tests.

**Base part.** The study was conducted at Ukrainian medical stomatological academy», Poltava, Ukraine, during January - May 2015. The sample consisted from Ukrainian undergraduate students with ages between 20-23 years old, examined at the end of some modules from the Paediatric Dentistry curriculum. The participation was voluntarily, the students were informed about the aims and the nature of the research and the study was conducted in accordance with the Helsinki Declaration of 1975, as revised in 2000.

The students of the fourth and fifth course were divided in three groups, according to familiarization with post-tests. The first group did not know tests before control module (post-testing); classroom assessment of these students was oral. The second group solved paper-based post-tests according a lesson theme as classroom assessment. After completing the tests students' answers were discussed between teacher and students. The third group had post-tests with right answers. Control module was performed as CBT (computer-based testing). All tests were MCQs with one-best-answer item that were constructed according guidelines [5].

The structure of the paper-based MCQ tests consisted of 10 items; the structure of final MCQs consisted of 50 items with five variants of answers and a single correct option. Students had one minute for one task. The assessments' results were quantified through marks from 2 to 5. «Five»– 90% and more right answers, «four» – 71-89%, «three» – 50-70%, «two» – less 50% right answers.

Comparative analysis was performed between classroom and summative assessment. The quality of knowledge was estimating by percentage of students with «four-five» mark. Next indexes were analyzed: percent of the quality of knowledge by summative assessment, percent of the quality of knowledge by classroom assessment, percent of the congruence and incongruence between classroom and summative assessment.

The percent of the quality of knowledge at summative assessment was the highest in third group (Table).

Table.

The quality of knowledge at classroom and summative assessment

Indexes	Groups		
	1 group	2 group	3 group
The percent of the quality of knowledge at summative assessment	56.7%	73.4%	84.3%
The percent of the quality of knowledge at classroom assessment	72.7%	70.6%	64.0%

In the first group results at summative assessment were worse than at oral classroom assessment that were are in agreement with previous study [6], which revealed that students have weak results of the MCQ test compared with the oral assessment. The percent of the quality of knowledge at classroom assessment was insignificantly different in first and second groups. The highest improvement of the quality of knowledge was in students who had post-tests with right answers.

The percent of the congruence between classroom and summative assessment was minimal in third group – 28.1% (Figure. Comparative characteristic of classroom and summative assessment). A 1 point difference was in 73.5% cases of incongruence in this group, 2 point difference - in 25.7% cases, 3 point difference – in 0.8% cases. Congruence in second group was in 48.5% cases. A 1 point difference was in 86.3% cases of incongruence in this group, 2 point difference - in 12.8% cases, 3 point difference - in 0.9% cases. Congruence in first group was in 47.5% cases. A 1 point difference was in 85.3% cases of incongruence in this group, 2 point difference - in 13.6% cases, 3 point difference - in 1.1% cases.

**Conclusions.** To sum up, the outcomes of students who had tests with right answers for control module, probably, can be explained by mechanical remembering them. It does not conducive to the quality of knowledge and not allow objectively assess their level.

The best outcomes of summative CBT were in second group that solved paper-based post-tests according a lesson theme as classroom assessment. Our findings might be explained that students solved some part of post-tests each lesson and discussed them with a teacher at the end. If students identify the link between summative assessments and their motivation, they tend to appreciate the effectiveness of continuous assessment and its contribution to deep learning [7].

This paper clearly showed that it is necessary to familiarize with tests each lesson because data of classroom assessment motivate students to prepare every day and can identify teaching and learning methods that need to be changed or developed. Thus, solving paper-based post-tests according a lesson theme acts important role in formative assessment.

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