

THE FEDERAL INTERNET-EXAMINATION IN HIGHER EDUCATION OF THE RUSSIAN FEDERATION

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Abstract

In 2005 the National Accreditation Agency of the Russian Federation (NAA) introduced the Federal Internet-examination in higher education (the Internet-exam project).

Basically, the Internet-exam is a nation-wide computer testing of students conducted in a great number of higher education institutions (HEIs) across the country at the same time. The unified national base of tests and unified methodology for analyzing and interpreting results ensure the comparability of achievements between similar educational programs in different HEIs.

Students training quality is viewed as its compliance with the State Educational Standards (SES) of the Russian Federation, which define the very basic, minimum requirements for the contents of courses taught in particular educational programs.

The Internet-exam follows the Bologna principles providing HEIs with the means to demonstrate quality of students' training. It helps HEIs in establishing quality management systems based on the external independent review. Furthermore, it gives HEIs an opportunity to prepare for an obligatory testing procedure accompanying the accreditation process in Russia.

Nowadays about half of Russian HEIs and their branches (1623 out of 3592) have taken part in the project at least once.

The paper gives details on ideas and principles behind the Internet-exam and the place it occupies in the higher education system of the Russian Federation.

Due to the growth of the number of higher education institutions (HEIs) (especially private ones) and to the fact that Russia signed Bologna process declaration in 2003, there is a need for a nation-wide system for evaluation of quality of students' training.

One of the distinct features of the Russian education system is the State Educational Standard (SES), which defines what and on which level students should know on the particular course of the particular program. These requirements define only the very basic, minimum, mandatory level of training.

Thus quality of students' basic training can be defined as compliance of students' achievements with the requirements of the State Educational Standard.

When HEI undergoes an accreditation process, compliance of students' outcomes with SES is measured as a part of the external review. This evaluation is performed in the form of computer-aided testing. Furthermore, an institution must conduct a self-evaluation (which includes measurement of students' outcomes) prior to its accreditation.

In 2005 the National Accreditation Agency of the Russian Federation (NAA) introduced the Federal Internet-examination in higher education (the Internet-exam project).

Basically, the Internet-exam is a nation-wide computer testing of students conducted in a great number of HEIs across the country at the same time using unified tests. Thanks to that and the unified analyzing and interpreting methodology, results obtained in different HEIs are comparable.

The main goals of the Internet-exam are:

- to help HEIs in establishing quality management systems based on external independent evaluation of compliance of students' outcomes with the SES;
- to promote and implement the Bologna process' principles in the education system of Russia;
- to provide HEIs with a recognized unified tool for conducting self-evaluation procedure;
- to give HEIs the opportunity to prepare for testing procedure accompanying accreditation process.

To achieve these goals the Internet-exam project relies on the following principles:

- the unified base of tests;
- the unified methodology for analyzing and interpreting of results;
- voluntary participation of HEIs in the project;
- full trust to the HEIs in the organization of the testing procedure;
- confidentiality of all obtained results;
- on-line and off-line testing mode (chosen by the HEI);
- use of modern information and communication technologies;
- use of criterion-referenced tests;
- summative assessment;
- testing is held two times a year (before or during summer and winter examination sessions).

Since 2005 there have been 7 Internet-exam sessions with the last session (April-July of 2008) attracting 1186 higher education institutions and 403 vocational education institutions from nearly all the regions of Russia. The number of test results obtained is 1,140,363 (that is more than 2 million a year in two sessions). The Internet-exam sessions last about two months and taking into account the fact that Russia spans 11 time zones the testing is running almost without a break during this period. Recently higher education institutions from the Commonwealth of Independent Countries (CIS) have joined the project. These are HEIs from Armenia, Belarus, Kyrgyzstan, Ukraine and Kazakhstan.

Currently there are item banks developed for 66 subjects with a total number of 74,693 test items. For each educational program a custom test structure is developed according to the requirements of the SES to the content of the particular course taught on this educational program. There are 678 distinct higher education programs and 438 vocational education programs in Russia. It would be an enormous amount of work to develop custom tests for more than a thousand of educational programs for 66 subjects. Fortunately, one can extract large groups of educational programs with the same SES requirements on a particular subject (this is especially true for generic subjects and less true for professional ones). This leads to the

total number of distinct test structures of 737. Furthermore, SES requirements for particular educational program consist of smaller blocks – the didactical units (DUs) – that are invariant in different educational programs (linear algebra, differential calculus and mathematical analysis would be examples of DUs for the maths course). Each DU consists of several corresponding test items. Hence, didactical units serve as the ‘building blocks’ for the custom test structures.

The development process of the item banks is rather complex and comprehensive. Each item bank undergoes a mandatory review by at least three external reviewers, a pre-test and a certification. A miscellaneous statistical analysis is extensively used to improve the quality of items and tests. Item writers for the Internet-exam project are from more than a hundred of different higher and vocational education institutions across all the Russian Federation.

The concept of didactical units plays the key role in one of the most distinct Internet-exam’s features – its assessment model. Firstly, the assessment is summative, i.e. it is carried out only after the subject course is finished. Secondly, the Internet-exam relies on criterion-referenced tests. It is due to the fact that the main question the project tries to answer is “Do the students meet the criterion set by the State Educational Standard or not?” That is why the Internet-exam testing methodology relies primarily on the classic test theory.

The Internet-exam assessment model ensures that students know well all the didactical units defined by SES. That is, it excludes cases when the student knows linear algebra and mathematical analysis well, but do not know differential calculus at all – he/she should have a sufficient training level in all three DUs as required by the SES. Hence, the student passes the exam only if he/she successfully acquires all of the test’s DUs. A particular DU is considered acquired by the student if he/she successfully accomplish at least half of the test items the DU consists of (typically 2 out of 4). An educational program is considered complying with the SES requirements if at least half of the program’s students have passed the test.

Every HEI that has taken part in the Internet-exam receives a comprehensive information and analytical report by the end of the testing session. The report contains statistical analyses of the obtained results represented by different indicators and diagrams. The report is made up of several sections aimed at the different categories of users – from the institution’s staff to deans and rectors. For example rectors are provided with the “bird’s eye view” of the HEI’s testing results and the HEI’s indicators matched against the consolidated background of all the other HEIs that took part in the testing. On the other hand, the staff is provided with the more in-depth analyses of students’ achievements so that decisions could be made to fix the shortcomings in the teaching process if any.

The Internet-exam project is backed by a complex software system which helps to cope with the large scale testing. Not only the testing itself is computer-aided, but all the stages of the process are automated: from the participants’ registration and planning to the statistical analysis of obtained results and generation of information and analytical reports.

The web-site www.fepo.ru (in Russian only) was developed to provide the academic community with the necessary information and support

regarding the project. Almost all of the communication between the organizing committee and the participating HEIs is done electronically via the above mentioned web-site. Having completed the electronic registration form on the www.fepo.ru web-site a HEI's representative receives credentials for his/her personal account that is used for further collaboration. Using the personal account HEIs' representatives plan and submit their testing schedule, receive tests and the results of the testing.

The Internet-exam provides two different modes for conducting the testing: on-line and off-line. In the on-line mode the testing is carried out directly on the www.fepo.ru web-site, but it obviously requires a stable broadband Internet connection – but unfortunately nowadays not all of the Russian educational institutions (especially regional and vocational ones) can afford it. In case the persistent Internet connection is not available there is another possibility: at first a HEI should download the necessary testing software and the test items base from the project's web-site. After that the testing is conducted locally in the HEI, without the Internet connection. When the testing is finished all of the obtained data should be submitted back to the project's web-site. This is the off-line testing mode. Every HEI can choose the mode that suits it best or even use the mix of the both modes.

The fact that the Internet-exam project relies heavily on modern information and communication technologies made it possible to make the technology both efficient and cost-effective.

In spite of its young age the Internet-exam project have already made a noticeable impact on the Russian higher education system, become a recognized quality assurance tool both amongst academic community and educational authorities of the Russian Federation and implemented one of the Bologna main principles by providing Russian HEIs with the means to demonstrate quality of students training.

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