

More and more people choose to test their knowledge by means of Internet services. More teachers prefer to use the services of Web-tests besides the widely accepted and traditional form of testing knowledge. More technological solutions aim to change and improve the current practice and to maximize the results from the implemented electronic education, Web-tests in particular, by means of the most advanced information technologies for the needs of education. Despite tendencies that still exist in places to criticize this new direction which Internet tests come to the foreground, the changes have managed to establish themselves and every forward-looking educational institute strives to meet the new necessity in the best way that its financial and technical conditions allow.

The present diploma work has three main goals.

- ✓ A review of the nature of the test and the types of test questions.
- ✓ Presentation of computer adaptive procedures (two-stage and multi-stage), to prove the efficiency of the implementation of the adaptive testing.
- ✓ Development of a sample adaptive computer test and definition of tendencies for future development.

One of the main topics is the methodology for development of tests and the types of test questions designed for Internet use. Another topic is the definition of the leading components in the development of Internet prototype for presentation of adaptive computer test based on the new information technologies. In many of the systems for electronic testing that exist at the moment and are represented on the Internet are identical copies of the commonly used paper tests. The new feature which changes radically the character of the Web-based tests is the inter-activity which is implemented in the possibilities offered by new technologies which Internet successfully integrates.

The result of the diploma work aims at the development of a sample Web based adaptive test, which defines a new direction in the radical changes to which the education and in particular the Web-tests are subject in recent years.

The detailed specification of the requirements to the design, software and hardware of the system for the Web-tests includes the specific aspects for its overall successful functioning. The system is based on the implementation of of the most modern information technologies and techniques so that the new medium allows for optimal possibilities for the users.

The technical recommendations for further development of the system for adaptive Web-tests are directed at the development of a medium for their implementation which is able to change actively and flexibly. This type of system for Web-tests creates personalized testing medium which is custom-made for any single user and is a functional basis for the perfecting of the educational (testing) processes by means of Internet.