

## Abstract

This dissertation thesis is focused on problems of multimedia and e-learning and their use in chemistry education.

In the theoretical part the knowledge dealing with problems of motivation, possibilities of connecting computer technics and multimedia into the educational process, requirements putting on authors of electronical materials and their users are summarized. Questions of knowledge testing and didactics tests production are also mentioned.

In the practical part the description of the properties, possibilities and instructions of the use of the educational multimedia computer systems „School as a game“, „Qualitative analysis“ and „Nobel Prizes in chemistry“ is carried out. These programs are determined for pupils of primary and secondary schools and students of universities preparing expectant teachers of chemistry. All this educational systems contain always sets of tests for curriculum training and certification of knowledge gained using above mentioned systems.

The important part of the dissertation thesis is the clearly processed evaluation of pupils an students testing. The goal of the testing was to verify, if the educational materials, modified into the e-learning courses, make easy and improve training of tested respondents. Several appropriate groups of respondents were always tested for the comparison of results.

The results of this research are arranged in clearly tables and graphs and the corresponding results are done.