The thesis provided deals with the question of computer based testing. The study contains two main parts: theoretical and empirical. It addresses two problems: what is the state of the art of computers implementation in testing (1), and what is the difference between applying two theories - classical test theory (CTT), and item response theory (IRT) in test construction, and analysis of test scores (2). The second problem has been solved both theoretical and empirical.

No doubt, that computer implementation in test administration, construction, score analysis, test forms creating, and adaptive testing is very useful activity. It seems, as well, implementation of IRT in test construction and its score analysis has some advantages in comparison with CTT. On the other hand, mastering IRT is a quite difficult task, and there are strict demands to be fulfilled before IRT could be applied, too.

There are principles of adaptive testing described in the study. This topic has not been described in any educational journal till today. Special software for realizing classical item analysis (ITEMAN, LERTAP 5) and for realizing IRT analysis (BILOG-MG) are presented here. To my knowledge comparison of item analysis carried out by methods based on CTT and IRT has not been presented in the Czech Republic.

An analysis mentioned above has been performed on data of 1696 candidates during their entrance examinations to Faculty of Education, Charles University, Prague in 2006. Candidates have been tested by four forms of General Aptitude Test.

In general, it seems the item analysis made by IRT provides parameters that are more precise since they do not depend both on characteristics of testees and structure of test items. But when we apply both methods of item analysis on large and representative samples of testees, both methods can be considered to be equal. However, more research in this area is needed.