

## **ABSTRACT**

The Doctoral Thesis is divided into two main parts – theoretical and empirical. It deals with the issues of assessing the learners' attainments during the teaching process of the subject technology, in the lower secondary education segment, with an emphasis on the learners' formative assessment, in which a set of electronic tasks, created by us, is used. Using empirical research, we investigated the impact of using this set of tasks during the teaching process on the learning performance of students in the cognitive area as well as the students' attitude towards using this set of tasks when learning. The set of electronic tasks includes tasks focused on understanding new concepts and the application of gained insights in both typical and problematic situations. The student uses the set of tasks while repeating, practising and consolidating acquired knowledge and skills from the exposition phase of the learning process. From a technological point of view, the set of electronic tasks integrates a software application to test learners as well as graphical elements or simulations, and from a didactic point of view, it integrates testing as well as assessment of learners and their learning skills. This way a complex didactic tool is created for the purposes of formative electronic assessment of learners during the teaching process. The empirical research was carried out in selected fully organized primary schools in the Banskobystrický region with a sample of  $n = 190$  students. Using the parallel group technology, we have implemented a natural pedagogical experiment according to the proposed experimental plan, which was the main research method. By applying statistical methods, we have confirmed the improvement of cognitive learning performance of students, as well as achieving better results by using a software tool of formative assessment in the teaching process and a significant positive attitude of students towards learning by using a set of electronic tasks during the learning process.