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Jozef Kostolny ; Jan Bohacik ; Tomas Hianik ; Peter Vestenicky ; Tomas Pecenkar ; Martin Lapin **View All Authors**

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Abstract: Children spend more and more time playing digital games nowadays. The success of digital games has also led to an interest in education digital games at schools. In addition, there are about 2600 elementary schools in Slovakia and so it is interesting to develop various education software. Therefore, an interactive education portal with a virtual environment for playing games and games-based teaching at elementary schools is being developed and improved. The portal consists in the selection of a game type such as a pairs game, a platform game or a movement-based game controlled with a keyboard by a pupil who has to pass through it with her or his answers to the designed questions of a taught or selected topic. The pupil receives an in-game currency called golds on the basis of gained knowledge. The recently added administration module of the portal and its improved gaming environment are presented. The administration module allows the registration of permitted users such as administrators, teachers, pupils and parents into the portal. Particular permitted users have various given privileges. An administrator is a school director or a person authorized by her or him who can add or remove teachers, pupils and parents. Teachers create questions, tests composed of these questions and export the results of pupils to a file. Pupils can work on improving their knowledge or take a test through a video game. Parents are allowed to check the results of their children and contact teachers.

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I. Introduction

While pupils in elementary schools still write their notes and tests down on paper these days, older students do most of their work with computers. At the same time, pupils from elementary schools play digital games at home and would like to play them at school too. Therefore, an interesting idea which connects both testing and digital gaming has emerged. Simply put, playful teaching and learning. In addition, the number of elementary schools in Slovakia is about 2600, which is interesting enough for introducing diverse education software. Testing has been a part of European education since the early 19th century [1]. It was brought to Europe from China where it had existed a lot earlier. Industrial revolution and compulsory education also helped the spread of testing as testing was much less time-consuming than subjective assessments of essays used

in Europe before. Digital games appeared widely in the 1990s and they have been incorporated into the lives of children and youths firmly since then [2]. Work with computers during teaching can also be advantageous because created materials and tests are easily recorded for use in the future. The consumption of paper is also reduced potentially, which might help to protect the natural environment if effective electrical sources are used for computers. The combination of testing and digital gaming seems very advantageous, however, the employment of digital games for learning is disputable because of the fact that digital games are often considered to be a tool for relaxing and having fun [3]. Nevertheless, teachers can use them for gaining motivation and explaining decomposed abstract concepts. According to [4], when students are engaged in an authentic gaming environment, they are able to learn content and obtain basic competences to confront novelty.

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