An Educational Application of Online Games for Learning Difficulties

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Abstract : The current paper presents the results of a conducted case study, which was part of the author's master thesis. During the past few years the number of children diagnosed with Learning Difficulties has drastically augmented and especially the cases of ADHD (Attention Deficit Hyperactivity Disorder). One of the core characteristics of ADHD is a deficit in working memory functions. The review of the literature indicates a plethora of educational software that aim at training and enhancing the working memory. Nevertheless, in the current paper, the possibility of using for the same purpose free, online games will be explored. Another issue of interest is the potential effect of the working memory training to the core symptoms of ADHD. In order to explore the abovementioned research questions, three digital tests are employed, all of which are developed on the E-slate platform by the author, in order to check the level of ADHD's symptoms and to be used as diagnostic tools, both in the beginning and in the end of the case study. The tools used during the main intervention of the research are free online games for the training of working memory. The research and the data analysis focus on the following axes: a) the presence and the possible change in two of the core symptoms of ADHD, attention and impulsivity and b) a possible change in the general cognitive abilities of the individual. The case study was conducted with the participation of a thirteen year-old, female student, diagnosed with ADHD, during after-school hours. The results of the study indicate positive changes both in the levels of attention and impulsivity. Therefore we conclude that the training of working memory through the use of free, online games has a positive impact on the characteristics of ADHD. Finally, concerning the second research question, the change in general cognitive abilities, no significant changes were noted.