

COMPUTER-BASED GAME ENVIRONMENT FOR PROMOTING THE FLEXIBLE UNDERSTANDING OF THE SYSTEM OF NATURAL NUMBERS

Boglárka Brezovszky, Erno Lehtinen
Centre for Learning Research, University of Turku

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The goal of the present pilot study is to describe the first findings regarding the process of development of *NumberNavigation Game*, a computer-based educational strategy game in mathematics which aims to promote arithmetic problem solving flexibility and an adaptive mathematical expertise. Data were gathered using the methods of video-recorded observation, interviews and analyses of game play. Individual case studies were analyzed in order to explore the relationship between different game rules, reward systems, the game story and the mathematical content. Preliminary results show that special care needs to be taken when implementing different game features, in order to assure that all arithmetic operations are used in equal proportion by the player. Results are expected to provide rich qualitative data that will be used in the development of future and more complex versions of the game.