SUPPORT PROBLEM FOR COGNITIVE FUNCTIONS IN THE E-LEARNING

L. S. Lysitsina, A. V. Lyamin, A. S. Bystritsky, I. A. Martynikhin

Abstract
Successful development of such important human cognitive functions as attention, perception and information processing speed, working and long-term memory, thinking, etc. is a necessary foundation for increasing the effectiveness of e-learning. One way for further developments of students’ cognitive functions in the process of e-learning consists in computer cognitive training sessions, which are included in the individual learning paths to promote a learner to the successful implementation of specific learning tasks of e-course. Analysis of the estimating problems for cognitive training effects (severity, stability and transfer) is done and the ways for their solution are proposed. It is shown that the biological basis for cognitive training effects consists in the processes of neuroplasticity of the brain that influence the duration and intensity of training. An approach to the organization of research for the effects of cognitive training, based on the usage of random methods is suggested. The prospects of game mechanics application for cognitive training implementation in elearning are shown. A detailed analysis of the approaches to the training of the basic cognitive functions, including working memory of learners, is carried out. The practical significance of this paper is to identify priorities for research and development of cognitive training in e-learning.

Keywords: e-learning, cognitive training, basic and complex cognitive functions, working memory training, neuroplasticity, assessment of cognitive training effects

References
29. Karch D., Albers L., Renner G., Lichtenauer N., von Kries R. The efficacy of cognitive training programs in