

P.Y. Halperin's activity theory and language consciousness theory: results of EEG-based research in the perspective of ICT-assisted foreign language learning

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This article presents the results of an EEG-based study of peculiarities of brain oscillatory activity during language tasks (based on the German language). The aim of the study was to reveal neurophysiological indicators, which allow to claim a significant difference between the ways of information input when considering language activity of learners at the neurolinguistic level. The methodological approach in the experimental group was based on the theory of stage-by-stage formation of mental activity and language consciousness in the understanding of P.Y. Galperin, according to which the native language turns into a language-model, and already with its help the mechanisms of language work are realized, and this skill in turn is transferred to the process of mastering the German language, gradually making the rejection of the native language possible. The results obtained allow us to claim the existence of certain differences between the groups of subjects, consisting in a smaller amplitude of the P300 peak and its smaller duration in the experimental group in comparison with the control one. Less activity in the alpha range for the experimental group was noticed. Taken together, these parameters may suggest less difficulty (compared to the control group) in completing tasks. The results of the study will serve as a neuro- and psycholinguistic basis for the development of information and communication technologies in the teaching of German on the basis of the existing linguodidactic course leading to the language proficiency test in accordance with international requirements CEFRL. The guiding foundations of the action theory of type 3 from P.Y. Halperin, the effectiveness of which is confirmed by neuro- and psycholinguistic parameters, can constitute an alternative basis for the development of digital learning programs which are based so far in foreign and Russian applications on the Ebbinghaus curve.