

An Effect of EEGBiofeedback on the improvement of concentration capacity in school-age youth

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Aim. The aim of the conducted study was an analysis of an effect of the EEGBiofeedback method on individual concentration capacity in school-age youth in Poland.

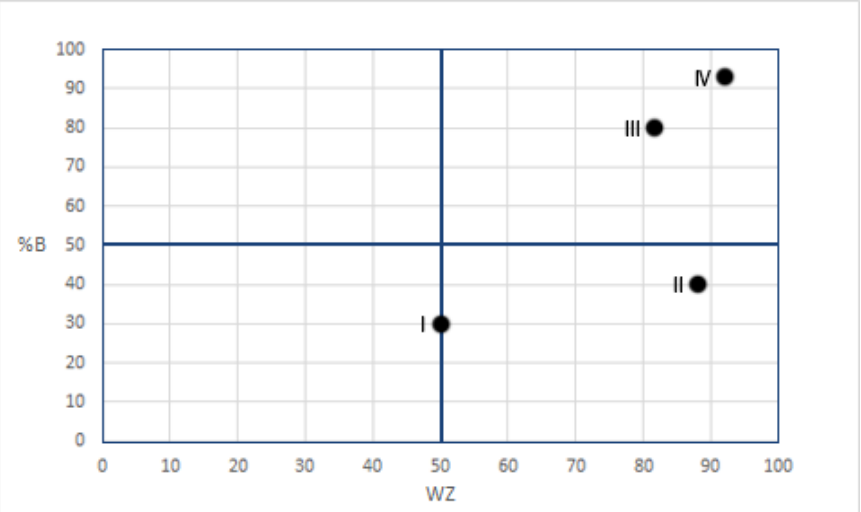
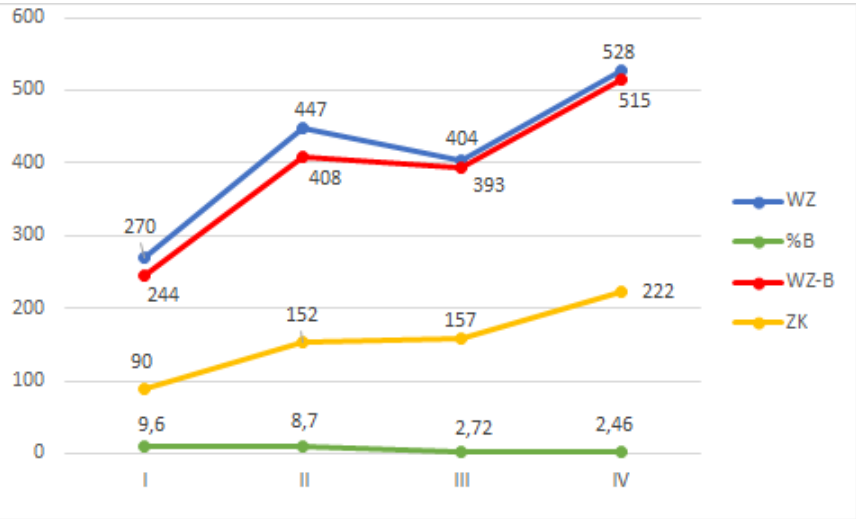
Research problem and theoretical basis. The EEGBiofeedback is a method of self-regulation based on the principle of biological feedback. The method may be used to monitor and improve brain activity, which makes it possible to increase the general cognitive function of an individual. The principles and applications of this method are the basis of the research hypothesis
H1: Training with the EEGBiofeedback method leads to an improvement in concentration capacity in school-age youth.

Research methodology. The study was conducted using the qualitative analysis of a case study. The analyzed study group consists of 6 students (3F, 3M) aged from 9 to 15 years. Characteristic symptoms found in the examined persons included learning difficulties described mainly as problems with concentration, focusing attention, poor memory, and obtaining bad marks. The examined students participated in a cycle of 10-20 training sessions with the EEGBiofeedback method. To measure the level of concentration capacity of the studied subjects and to collect information about their school performance, the d2 Test of Attention, interview, and psychological observation were used in the study

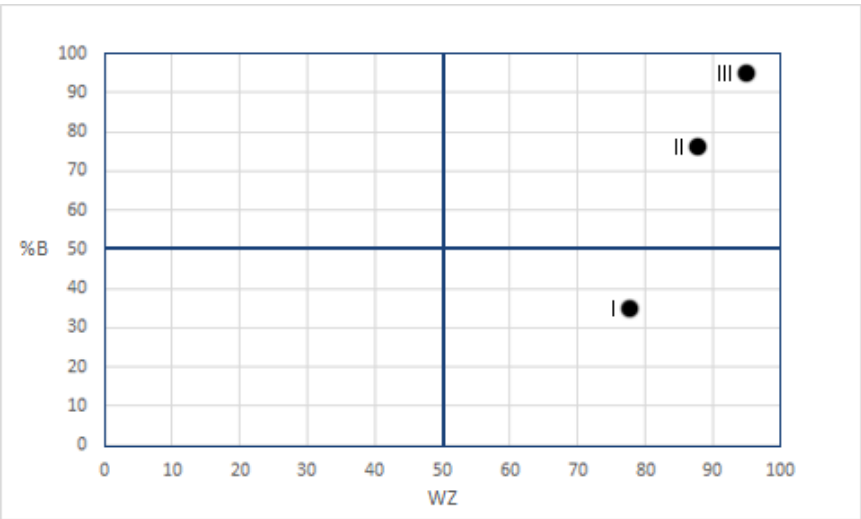
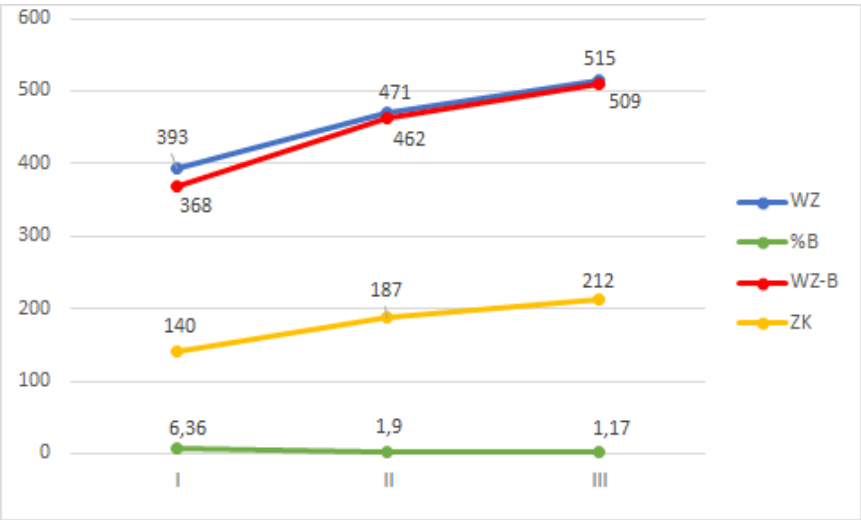
Results and conclusion. The results obtained with the **d2** Test of Attention (by R. Brickenkamp) show a marked improvement in the studied subjects' concentration capacity; the improvement concerns the following test parameters: **WZ** (the total number of the identified letters), **%B** (the percentage of errors), **ZK** (concentration capacity). The information obtained with a psychological interview shows that the effectiveness of their school performance also increased, which is shown in the fact that they obtained better marks than before the EEGBiofeedback sessions. The results of the study confirm the research hypothesis that regular participation in the sessions conducted with the use of the EEGBiofeedback method positively affects concentration capacity and improves an ability to use it in life.

Results

	I	II	III	IV
WZ	270	447	404	528
%B	9,6	8,7	2,72	2,46
WZ-B	244	408	393	515
ZK	90	152	157	222



	I	II	III
WZ	393	471	515
%B	6,36	1,9	1,17
WZ-B	368	462	509
ZK	140	187	212



Discussion of the results and application. The EEGBiofeedback method has a wide range of applications. It may be used in children and adolescents, adults, the elderly, people with various problems and difficulties, as well as in healthy subjects. Its aim is to increase concentration capacity and intellectual effectiveness and skills, to reduce the level of experienced stress, and to support everyday cognitive functioning.