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Effects of the Calisthenic Exercise Program in the Physical Education Teaching on the Elementary School Pupils' Motor Abilities

Extended summary

The studies from the physical education context indicated that primary school children all over the world have a constant decline in physical activity. Consequently, it has a negative impact on their motor skills. One of the first tasks for every PE teacher is to encourage pupils' regular physical activity and to do so that activity should be interesting, engaging, and fun. Calisthenic exercises seem to be all of that. Furthermore, other positive features of these exercises are: they are suitable for all ages, individual intensity setting (everybody is dealing with his/her body weight), they do not require additional equipment, they are suitable for the development of all motor skills, etc. This research aims to determine the effects of the program of calisthenic exercises on the motor abilities of elementary school children. The research is an experimental study with parallel groups of 50 students from two fifth-grade classes (25 children were in the experimental group and 25 were in the control group). An experimental program lasted 10 weeks during regular physical education classes, and it has consisted of two sets of exercises where the first set was applied for 6 weeks and the second set was applied from week 7 to 10. Progression was secured with exercises' level of difficulty since the second set of exercises were somewhat harder and with variations in work and break lengths. In the first three weeks exercise were performed in two circles with 25 seconds of work and 25 seconds pause with 3 minutes break between the two circles. During the period from week 4 to 6, there were two circles of exercises with 30 seconds of work and 20 seconds pause and 3 minutes break between the circles. In weeks 7 and 8, there were three circles of exercises with 20 seconds of work, 20 sec-

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onds pause with 2,5 minutes of break between the circles. Finally, during weeks 9 and 10, there were three circles with 25 seconds of work, 20 seconds pause with 2-minute breaks between circles. The first set of exercises: Exercise 1. Standing with feet together. Alternative arm raises with simultaneous raises on toes. Exercise 2. Standing with feet wider than shoulder-width apart, arms raised at shoulder height on the sides. Alternative trunk twists. Exercise 3. Standing with feet wider than shoulder-width apart, forward bent arms raised at shoulder height on the sides. Alternative trunk twists. Exercise 4. Standing with feet together. Arms on sides. Alternative side lunges with bent arms in front. Exercise 5. Lying on abdomen, with the arms stretched out to the front. Alternative raises left arm/right leg, right arm/left leg. Exercise 6. Lying on the back with bent knees, arms on sides. Crunches with arms in front. Exercise 7. Push-up position on toes and hands. Push-ups. For those pupils who could not perform a proper push-up, a modified version of knee push-up was approved. Exercise 8. Deep squat, touching the ground with hands. High jumps with arms raised. The second set of exercises: Exercise 1. Standing with feet together. Arms on sides. Marching in place with arm swings. Exercise 2. Standing with feet wider than shoulder-width apart, arms raised above the head. Perform alternative side bends. Exercise 3. Standing with feet wider than shoulder-width apart, arms raised above the head. Deep forward bend, swing, upright, swing. Exercise 4. Standing with feet shoulder-width apart, arms on sides. Deep squat with arms forward, standing up with arms forward raise above the head and single-leg back raise alternatively. Exercise 5. Kneeling with hands underneath shoulders and knees directly beneath the hips. Alternative opposite arm and leg is lifted and lengthened simultaneously. Exercise 6. Lying on the back with bent knees, arms on sides. Crunches with arms in front. Exercise 7. Forearm plank position. Exercise 8. Standing with feet together. Jumping Jacks. The PE teacher in charge was actively encouraging the pupils from the experimental group to do their best. After the statistical analysis, it was determined that the boys in the experimental group achieved better results than the boys in the control group on three of the eight motor tests, while no statistically significant differences were found in girls. Boys from the experimental group had better results in abdominal strength, coordination, and explosive strength. In the girls of the experimental group, progress in motor abilities was determined between the initial and final measurement, while in the girls of the control group this was not the case. However, there were no statistically significant differences in motor abilities between the experimental and control group in girls. The applied program of calisthenic exercises can lead to positive transformations of motor abilities, and the recommendation for future research is to enrich the content with the use of various props and music, which would probably lead to a greater engagement of girls and boys during exercise.

Keywords: motor skills, calisthenic exercises, physical education.

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