

PHYSICAL EDUCATION WITH "BRAINBALLS" TO IMPROVE ENGLISH, MATH SKILLS, MOTOR SKILLS AND PHYSICAL FITNESS IN 7-YEARS-OLD PUPILS IN VIETNAM

ABSTRACT

The purpose of the study was to evaluate the impact of the Brainball program in physical education classes on English skills, math skills, gross motor skills, and physical fitness of 7-year-old pupils at a primary school in Vietnam.

The study was conducted in the school year 2019-2020 at an elementary school in An Giang. A total of 55 students (23 boys and 32 girls) aged seven years participated in the study. The study design was a pedagogical experiment with the use of the technique of parallel groups. The pedagogical experiment involved two groups: 28 pupils (12 boys, 16 girls) in the experimental group and 27 pupils (11 boys and 16 girls) in the control group – the groups (control and experimental) were assigned to the research program by a random selection. The teaching process was conducted in both groups (experimental and control) based on the same curriculum specified by Vietnam's Ministry of Education and Training. All physical education classes in the experimental group were taken twice a week for 35 minutes, including the educational balls tasks. In the control group, physical education classes were also taken twice a week for 35 minutes and conducted with a traditional curriculum (without BRAINballs).

The study conducted tests on fundamental motor skills, physical fitness, math skills, and English skills of pupils in two groups (experimental and control) at two periods: the beginning of the school year (September 2019) and the end of the first semester (January 2020) and for estimating long-terms effects third time in September 2020. Fundamental motor skills and physical fitness tests were conducted at the training ground during physical education classes. Math and English tests were taken in the classroom during regular school hours. In addition, prior to taking the tests, information about the test and how to perform it has been approved by the principal, teachers, and parents of students.

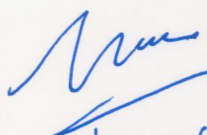
The analysis of results showed no major differences in physical fitness development, math skills, and English skills between 7-year-old pupils from the experimental group and the control

group after 20 weeks of experimentation. However, there were significant differences in the level of physical fitness development, math skills, and English skills between pupils from the experimental and control groups after one school year. Students from the experimental group improved significantly compared with students from the control group in math skills ($p=0.003$), English skills ($p=0.005$) and in physical fitness level, specifically in 50-meter running ($p=0.004$), Toe touch ($p=0.013$), Standing long jump ($p=0.007$), 4 x 10m sprint ($p=0.033$), Hand strength ($p=0.023$).

The level of fundamental motor skills of 7-year-old pupils at the second test (after 20 weeks of testing) could not be measured because of the COVID-19 epidemic. However, the results of a follow-up study (after one school year) showed that pupils from the experimental group had significant improvements compared with pupils from the control group on both sub-tests, locomotor skills $p=0.001$, object control skills $p=0.001$.

Research also demonstrated that there were no gender differences in the development of English and maths skills, fundamental motor skills, and physical fitness when the education balls were used in physical education classes for 7-year-old pupils in Vietnam.

The results of this study provide promising early findings that the adoption of BRAINballs in preschool and primary curriculum in Vietnam could be a useful solution for improving students' mobility and academic performance.


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