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IMPLEMENTING AIKIDO IN PHYSICAL ACTIVITY PROGRAMS WITH 9-10 YEAR-OLD CHILDREN

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ABSTRACT. No doubt, in the last years we are witness to maintain supported to make improvements in content and form of the Educational Program from domain of Physical Education and Sports in our country. These searches are concentrate in two great direction: 1. for identifying new instruments resources to increase the attractiveness of lessons and physical education and sports. 2. for improving bio-motor potential in young children. To achieve these two points we developed a project for the children enrolled in the "Brassai Samuel" High School of Cluj-Napoca, in the period 01.10.2013-1.06. 2014, entitled "*Strategies to approach physical training in school children by applying aikido exercises in physical activities in the classroom".* This pilot experiment is part of a research project entitled "Diversifying educational exercise (martial arts) in children of 9-10 years of age to improve health". Groups were formed with 3rd and 4th grades pupils. The children who attended these classes were 9 and 10 years old. The number of participants (N) being enrolled was 40 (boys), tests were applied to 10 children, 5 per each group (experiment and control), with the consent of their parents.

Keywords: *School curriculum programmes, physical activity, aikido, test, indices, correlations, children.*

REZUMAT. ***Implementarea Aikido în programul de activităţi fizice la elevii de 9-10 ani.*** Fără îndoială, în ultimii ani asistăm la o încercare susţinută de a aduce îmbunătăţiri în conţinutul şi forma Programei de învăţământ, în domeniul Educaţiei Fizice şi Sportului din ţara noastră. Aceste căutări se focusează, atât pentru identificarea unor noi instrumente şi mijloace cu care să creştem atractivitatea lecţiilor şi a activităţilor de educaţie fizică şi sport, dar şi pentru îmbunătăţirea potenţialului biomotric al elevilor de vârstă mică. Astfel, am implementat în cadrul Liceului "Brassai Samuel", din Cluj Napoca, în perioada 01.10.2013 – 01.06.2014, proiectul „*Strategii de abordare a pregătirii fizice la elevii de vârstă şcolară mică prin aplicarea exerciţiilor aikido în cadrul activităţilor fizice la clasă*".

Cuvinte-cheie: *programa şcolară. activitate fizică, aikido, test, indice, corelaţie, tineri*

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Introduction

Every national institution of education tries to offer different "school curriculum" that would attract a larger number of children in activities but at the same time to be a form of training needed for outlining a healthy lifestyle, as well as active from physical activities point of view (National Education Law, art. 1/2011).

Along with widening, the choice of physical activities programs by introducing aerobics exercises, fitness or swimming lessons during physical education classes the content of sports activities was improved, greatly contributing to increasing their attractiveness.

Among other sporting branches that were able to attract the interest of school children there are martial arts, found in many schools from other continents. In Romania, in the recent decades, have been entered in sporting activities supplementary, several branches Oriental arts (judo, karate, aikido) which quickly won the thousands of practitioners, children and adult people as well.

Aikido, as sport activity, promoted by us, means "Martial Art" loved by all sections of society, "from children to adult people as well" for his educational valences, but also for "exotic oriental" with which is surrounded it.

The project motivation

The concept from which we are starting the project is defining ways to make improvements in "educational curriculum" aiming to increase the attractiveness of physical education classes, attracting young children to practice physical activities.

The implementation of practicing aikido in the physical activities program for young children took into account several objectives found in "philosophy of martial arts" being associated with the idea of strenuous physical exercise which, in addition to the effects of technical training, improve our physical condition and bring a better control of weight. Similar research projects can be found in the works started by: Faculty of Human Development, Kobe University (*www.h.kobe-u.ac.jp*).

The project aimed to start attractive physical activity programs to offset the current trend towards sedentary. A sedentary lifestyle causes among many other harmful consequences, the alarming increase in number of obese children. Current statistics on the prevalence of obesity show worrying figures as the number of overweight people has increased dramatically every year. The lifestyle of parents, disordered eating, and the lack of physical activity in the daily schedule of the children are among the triggers.

This pilot experiment is part of a research project titled "Diversify educational exercise (martial arts) in infants 9-10 years to improve health", and last but not least, the aim of this pilot experiment is that by using exercises contained in "Aikido program for pupils aged 9-10 years old", and correlating effects on motric development potential (speed, agility, strength, stamina, balance) can be determined by measurements these improvements qualitative and also increase the attractiveness of these activities.

Among the benefits of the project pursued by promoting our research, we mention:

- controlling sedentary lifestyle, weight gain of young children (overweight and/or obesity);
- attracting a large number of children in those activities;
- strengthening the balance, knowing that at this age these skills are stabilizing, the technical exercises from aikido (falling techniques) contributing to its improvement (Homma, Gaku, 1993).

Materials and Methods

a. Time and place of the research

The project was conducted between 01.10.2013 - 15.06.2014 at “Brassai Samuel” High School, Cluj-Napoca, in the gymnasium.

Materials used: Gym suits, kimonos, mattresses, trellises, gymnastics benches, mirror.

Time table activities: Tuesdays and Thursdays, 4.00-5.30 pm, during "After school" time.

Children: Groups were formed with 3rd and 4th grades pupils. The children who attended these classes were 9 and 10 years old. The number of participants (N) being enrolled was 40 (boys), tests were applied to 10 children, 5 per each group (experiment and control) having the consent of their parents.

b. Project purpose

"Aikido for children" was intended to be a project for children of primary school.

Purpose: Application of physical and technical training programs using physical exercises that are specific to athletics and aikido. This way we intend to contribute to improving motoric potential of children and to increasing the attractiveness of the classes for extracurricular physical activities.

Objectives

1. Improving motric abilities (speed, agility, strength, stamina) using specific athletics and aikido exercises.
2. Improving balance and coordination.

The research hypothesis

The promoted program that includes specific athletics and aikido exercises can produce beneficial effects (measurable, quantifiable) on improving motoric potential in 9-10 years old children.

c. Procedures

Research Methods: The battery of tests

We acted in implementing pilot experiment in two directions, physical activity program conducted with the experimental group subjects and physical activity program conducted with the control group subjects:

Table 1. The program of physical activity

THE EXPERIMENTAL GROUP	CONTROL GROUP
LESSON 1	**LESSON 1**
▪ Speed running the 20-meter with bottom start and standing start; ▪ Running speed with change of running direction at signal. Distance: 20-30 meters; ▪ Walking on beam or gym bench in a given direction, facing or not the direction of movement;	▪ Exercises running, jumping exercises, exercises throws with the ball ▪ Running speed change of direction running to beep. Distance 10-20 meters; ▪ Long jump from place at the and sound signal, five repetitions linked; ▪ Runs over different little obstacles; ▪ Relay race;
LESSON 2	**LESSON 2**
Technical exercises aikido: ▪ Starting from the edge of the mattress with the grasping the partner, pulling or pushing each other until one of the two	▪ Exercises, crawling, climbing, lifting and transport objects, escalating; ▪ Basic motor skills, walking, running, throwing - grip,

THE EXPERIMENTAL GROUP	CONTROL GROUP
leads the other in the opposite side of the mattress. Number series: 3-10 Number of repetitions: 2-3; Pause duration: 1 to 2.0 minutes; ▪ Moving on back. Serial number: 5. Duration: until the end of the mattress ▪ Move on the mat. Audio signal. Stop. ▪ Keeping a combat position. Serial number: 4. Duration: time the timer (1-15 seconds); ▪ Movements on the mat blindfolded. Serial number: 4. Duration: 1-2 minutes.	▪ Exercises of organization and order, general physical development exercises, application exercises.

Note: The second part of each lesson physical activities were organized dynamic games and applications covering some routes.

The research method

In this project, we used the following research methods: natural experiment, challenged experiment, the longitudinal multivariate, invoked type. Data analysis was carried out with substantially non-parametric tests (*Wilcoxon and Mann-Whitney U test*).

The error threshold is accepted $\alpha = 0.05$, meaning that we accept a 95% probability that the test result is not accidental. Due to less of subjects (5 + 5), interpretation of the results by nonparametric tests encountered some difficulties, but overall have been significant advances at the experimental group.

Within this study we used for the evaluation we used for the assessment and quantification the results achieved by subjects found in the following EUROFIT tests (Eurofit, 1993).

1. Flamingo balance test - the test of balance on one foot left and right.
2. «BEEP» -running 20 meters x n – endurance.
3. TRANSFER- running - 10 x 5 meters - speed.

Results and data analysis

Following of the two examinations, initial and final, we obtained the following results:

Table 2. BALANCE test results - compared to the two groups

GROUPS	Media	The average difference	Median	Standard deviation	Minimum	Maxim	Ampli-tude	Variation coeffi-cient
Control	22.20	9.00	19	9.52	12	35	23	42.9%
Experiment	31.20		28	7.73	24	40	16	24.8%

MANN-WHITNEY U- Test

Table 3. Rank values

GROUPS	N	Rangs medium	Sum of ranks
Control	5	4.20	21.00
Experiment	5	6.80	34.00
Total	10		

Table 4. Parameter values

Parameter test	Result
Z	-1.358
P (2-tailed)	0.175
Magnitude- effect	0.43

We note that at the test of balance the average of the experiment group is higher than the one of the control group by 9 sec (40.5%), average being 31.20 to experiment, respectively 22.20 to control. The results vary from 12 and 35 at the control group, and from 24 to 40 at the experiment group. The dispersion of data around the average is inhomogeneous at the control group and relatively homogeneous at the experiment group. The value of the index of the effect size (0.43) shows a medium to large difference between the two groups. According to the nonparametric Mann-Whitney U test, there are no significant statistical differences between the two groups, z = -1.358, p = 0.175> 0.05. The null hypothesis is accepted. Graphical representation of individual times, averages and their difference for the two groups is shown in Fig. 1.

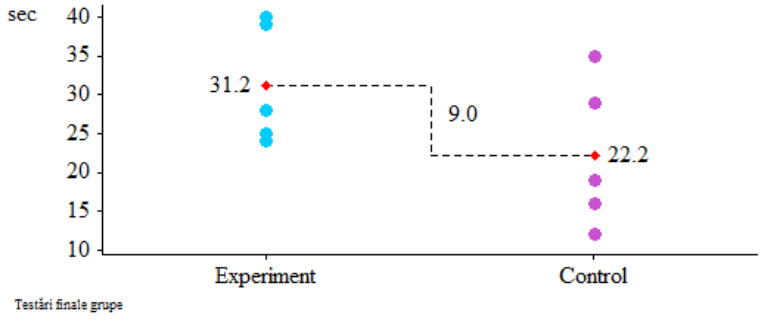

Fig. 1. Test balance

Table 5. Results "BEEP-TEST" - Compared to the two groups

GROUPS	Media	The average difference	Median	Standard deviation	Minimum	Maxim	Ampli-tude	Variation coefficient
Control	105	42	120	34.96	67	140	73	33.3%
Experiment	147		128	65.63	67	240	173	44.6%

U Mann-Whitney Test

Table 6. Rank values

GROUPS	N	Rangs media	Sum of ranks
Control	5	4.80	24.00
Experiment	5	6.20	31.00
Total	10		

Table 7. Parameter values

Parameter test	Result
Z	-0.736
P (2-tailed)	0.462
Magnitude- effect	0.23

As we can see at the test "Beep" - Running endurance – the average of experiment group is higher than the one of the control group by 42 seconds (40.0%), the group average being 147 at experiment group, respectively 105 at the control group. Results vary between 67 and 140 at the control group, and between 67 and 240 at the experiment group. At both testing the dispersion data around the average is inhomogeneous, in which case the central tendency of the data is best represented by the median. The index of the effect size (0.23) indicates a low to medium difference between the two groups. Nonparametric Mann-Whitney U test shows that there are no significant statistical differences between the two groups, z = -0.736, p = 0.462> 0.05. The null hypothesis is accepted. The graph in Fig. 2 shows the individual times values, averages and their differences for the two groups at final testing.

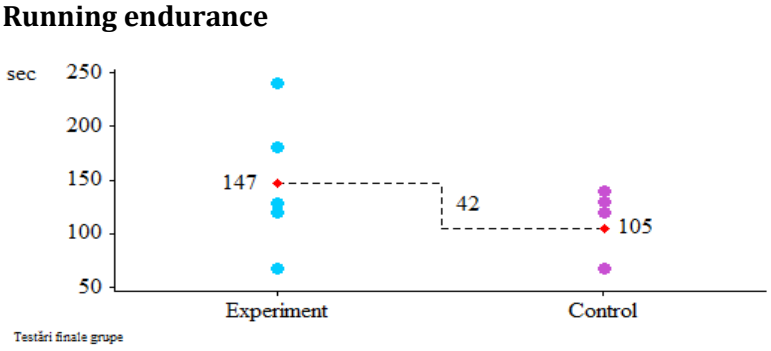

Fig. 2. Running endurance

Table 8. Results TRANSFER comparative test to the two groups

GROUPS	Media	The average difference	Median	Standard deviation	Minimum	Maxim	Ampli-tude	Variation coefficient
Control	37.60	-10.8	38	6.27	29	46	17	16.7%
Experiment	26.80		28	5.72	18	33	15	21.3%

MANN-WHITNEY U- Test

Table 9. Rank values

GRUPE	N	Rangs media	Sum of ranks
Control	5	7.60	38.00
Experiment	5	3.40	17.00
Total	10		

Table 10. Parameter values

Parameter test	Result
Z	-2.193
P (2-tailed)	0.028
Magnitude- effect	0.69

The average of the experiment group at "Transfer" Test - running 10 x 5 m is lower than the one of the control group with 10.8 sec (28.7%), averages being 26.8 at experiment, respectively 37.6 at control. The results vary between 29 and 46 at the control group and 18 to 33 at experiment. At both testing sessions, the dispersion of data around the average is relatively homogeneous. The index of the effect size (0.69) indicates a very big difference between the two groups. According to the nonparametric „Mann-Whitney U-Test" there are important statistical differences between the two groups, z = -2.193, p = 0.028 <0.05. We reject the null hypothesis and accept the research hypothesis. Fig.3 shows individual time, averages and their difference for the two groups at the final testing.

Running 10 x 5 meters

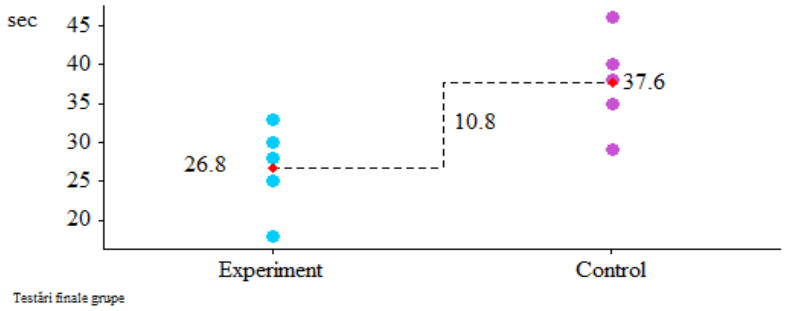

Fig. 3. Running - 10x5metri

Conclusions

Following the results obtained, we detach the need for a strategy to diversify the content of training programs for young age children and the inclusion of technical exercises of aikido can be an option in this regard.

The results achieved have shown progress on multiple directions: speed, strength, balance at the students of the experimental group, although there are significant differences only at speed parameters. Finally we find that the hypothesis of this research was in large validated.

The fact that the program of activities included aikido techniques has provoked in children a positive state of mind during the entire period of research. Children were gladly willing to resume work.

In conclusion this project can be improved considering the aim pursued by widening the choice of exercise programs, including elements and exercises from sports branches agreed by children.

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