

**134 - INCREASING THE PHYSICAL CONDITION OF YOUNG PEOPLE FROM CLUJ NAPOCA THROUGH MODERN MEANS**GROSU VLAD TEODOR <sup>1</sup>; POPA CĂLIN <sup>2</sup>; GROSU EMILIA FLORINA <sup>3</sup>;  
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**INTRODUCTION**

Nowadays it is well documented that the chronic diseases are caused by the lack of movement, by sedentarism. It has been shown that exercise can be a mean of preventing or improving many physical or emotional issues. The new vision considers physical activity a part of contemporary lifestyle. Cuceu, D., A & Cuceu, M., (2015).

The state of preparation for an individual's activity is closely related to the level of physical condition. A good physical condition motivates you to carry out your everyday activity with sufficient energy, without exaggerated fatigue, in the direction of fulfilling the tasks successfully. Teachers' intervention is to change the mentality of the importance of the movement among young people by arguing and applying the means of modern means to improve physical condition.

Cuceu, D., A. (2015), Dragnea, A., (1999) considers that physical exercise is an instrumental action, designed and programmed to achieve the objectives of various motor activities (like muscle tonicity and toning development, learning and improving motor skills and abilities, skills, etc.).

Over time there have been numerous identifications of the physical condition components. In the last few years, however, specialists, like Fedewa A., (2011), Epuran M., (2011) described the main components of physical condition as aerobic capacity, strength and muscle endurance, flexibility, body composition and nutrition. Grosu E., F. (2010)

According to Martin A., quoted by Weineck J., (1993), the form of exercise has a kinematic and a dynamic structure. The kinematic structure brings together the spatial-temporal aspects of the movement: the distribution on the movement phase; speed characteristics; the temporal milestones of the movement, Șiclovan, I., (1979), the lengths and trajectories of the movement; The dynamic structure refers to the internal and external forces of the movement: the relationship between the force and the brakes; the coordination of partial impulses that allow summing forces, Cuceu D., (2014). Physical exercise must be strictly personalized (taking into account the health, staff, family and anthropometric data, exercise capacity, laboratory tests, ECG, etc.) and their safety, Duša, F., S., Bădău, A., Bădău, D., Trambitaș, C., Brînzaniuc, K. (2017)

**METHODS****Study hypothesis**

The present work is conceived as an experiment, aiming to identify the means that contribute to the optimization of the physical condition. In this context, the main argument of the theme is the implementation of Breakdance, Kangoo Jumps, Free Run and Capoeira programs to improve physical condition, expressed by speed, pace, thrust, general coordination, dynamic balance, joint mobility and muscle elasticity.

**Purpose and objectives of the paper**

The objectives of the study were: recording the level of parameters by initial and final testing; designing, selecting and applying the proposed means as an independent variable in the experiment; the interpretation of results and developments recorded after four months of experimentation (application of the intervention program).

The proposed programs offer to young people the image of a harmonious, expressive and aesthetic movement in order to develop the physical condition as well as to acquire knowledge for the independent practice of Breakdance, Kangoo Jumps, Free running and Capoeira programs independently at home.

**Research design**

Diversification of physical exercises using Breakdance, Kangoo Jumps, Free Run and Capoeira represents a challenge in order to achieve the research goal. The experiment lasted 7 months, from October 2016 to April 2017, in different fitness gyms from Cluj – Napoca.

**We have applied three tests:**

*First test* - Travel Speed: The run has a length of 100 m; the start was from standing on the feet and each subject started when they felt ready and had two attempts, the best time was marked.

*Second test* - Rhythm: measured by running on the metronome, which was set at 90 beats per minute, alternately using two sounds. At each metronome sound, the subject had to walk. Each subject had 3 attempts and the best time was recorded.

*Third test* –Detente/Length, was measured by three successive jumps. The break between the jumps had to be shorter than one second. Each subject had 3 attempts and the total length of the three jumps was calculated.

The dependent variable is represented in our experiment by the subjects and their level of physical condition considering the speed of movement, rhythm, thrust, general coordination, dynamic balance and mobility. For each discipline, there were 6 subjects: 3 boys and 3 girls aged between 15-25 years old. We have chosen these ages in order to fully emphasize the benefits of these sports in young people.

In our case, the independent variable is the training program applied to the subjects, grouped according to the mean of the training, where the order and the number of motric acts varies. Every training is different.

The statistical significance was determined by the LSD, "least significant difference", multiple-comparison post-hoc analysis. It most often accepts a significant difference. This was not the case here, as the significant differences had a much-improved outcome in the final measurement compared to the initial one. Thus, a value less than 0.05 is significant and one greater than 0.05 is insignificant.

**Breakdance**, like all other dances, has specific names according to the dance and acrobatic movements. Footwork translated exactly as "footwork". It is used in the beginning of the representation, between the elements of power moves and sometimes at the end of the representation. The most popular footwork moves are: Top rock (consists in a mix of elements), Toot rock, 1-2 step, Cross step, Tripping feet, 6 Steps, 3 Steps, the coffee grinder, Swipe, Bronco, 90s, Air chair, Aka & Witch a way. Surely there are still many more, some without names. All these moves can be put in any order and improved by adding different steps, creativity has an important part. Power-moves are those elements with a high degree of difficulty. It requires courage, previous training, explosive force and a "little dose of madness". In addition to the leaps from gymnastics, we mention: Windmill, Headpin, Jackhammer, Had slide, Baby spin, Hand hops, Flare, Air Fare, Buddha spin, Deadman float, Elbow hops, 2000s, Boomerangs, Floating, Gremlin spin, Elbow spin, Elbow flare, Elbow track, Taisuke critical, 1.5 Air Flares and one hand air fare. The list may continue as long as the dancer's creativity can continue.

**Kangoo Jumps** - has a single category of motion and are combined with each other, in a form of a choreography. They are, of course, structured by difficulty, starting with the simple ones and gradually adding more and more difficult. These are the main moves, roughly ordered, from the easiest to the most challenging: Bounce, Basic jog, Jumps with lifts, Knee up, Pendulum, Side lift, Hamstring Curl, Jumping Jack, 180 ° Jump, Kicks, the list of Kangoo Jumps is almost infinite. These are the most recommended. Of course, imagination can create more spectacular actions, they are not recommended without the supervision of an authorized instructors in the fitness rooms. Grosu, E., F. (2012)

**Free running** gives absolute freedom to the tracer and has an infinity of elements. We will mention the most commonly used by us, mostly from gymnastics: Ronda, Flick, Cartwheel, Roll, back, Hand spring, Front hand, Kong jump, Flag, Aerial, Butterfly, Russian kick, Folia Seka, Gainer, Cheat gainer, Rise, Side flip, Wall flip, Wall flip, Side wall, Ink, Lion, Boomerang, vault, King Kong vault, Cat lap and Swinging through.

**Capoeira** can also be performed on music, and the division of the elements into categories is done depending on the difficulty of the acrobatic elements and whether they are attack or defense elements. Most of the names have an exotic sound, coming from Brazil, where Capoeira appeared such as: Jinga, Martelo, Marteleot, Macaco, Frente, Quexada, Role, Fola, Bencao, Astera, Negang, Escopado Compass, Cruz, Balanca, Bananeira, Negativa, Negativa Angola, Ponte, Cadeira, Troca, Queda de rins, Cocorinha, Esquiva, Resistencia, Bencao, Gancho, , Bandeira, Folha seca, Relogio, Carpado, Helicoptero and Armada dupla.

#### **Duration and dosage**

The training took place on average: 3 sessions/week of 90 minutes Breakdance; 3 sessions/week 60 minutes of Kangoo Jumps; 3 sessions/week of 120 minutes Free running; 3 sessions/week 90 minutes of Capoeira. The majority of men did not miss out on more than 4 workouts in the 4 months, which means they attended on average 44 training sessions each. In the case of women, the average absence was 6, thus they attended on

average 42 training sessions.

## RESULTS AND DISCUSSION

Following you can see the tables with initial and final testing for each studied discipline, concerning speed (see table no. 1.), rhythm (see table no. 2.) and length/detente (see table no. 3.).

**Table no 1. Speed – 100 m/sec**

Discipline	Subjects	Gender	Initial testing	Final testing	Statistical significance
Breakdance	M. A.	M	13,50	12,95	N = 0,066
	V. G.	M	14,75	14,00	S = 0,021
	A. P.	M	15,75	14,85	S = 0,019
	S. P.	F	16,95	16,85	N = 0,088
	A. T.	F	17,00	17,15	N = 0,081
	I. A.	F	17,80	17,00	S = 0,020
Kangoo Jumps	Z. V.	M	14,00	14,00	N = 0,100
	K. A.	M	16,05	15,95	N = 0,807
	D. G.	M	16,65	16,05	N = 0,072
	A. G.	F	16,95	16,75	N = 0,099
	N. R.	F	17,50	17,10	N = 0,066
	H. V.	F	17,60	17,40	N = 0,071
Free Running	T. F.	M	17,00	16,00	S = 0,011
	G. L.	M	17,05	16,00	S = 0,009
	S. G.	M	17,45	16,05	S = 0,006
	A. G.	F	17,00	16,50	N = 0,060
	O. P.	F	17,10	15,95	S = 0,010
	H. O.	F	18,20	17,20	S = 0,011
Capoeira	A. I.	M	13,45	13,50	N = 0,190
	R. O.	M	15,40	15,20	N = 0,077
	C. P.	M	16,85	16,05	S = 0,041
	I. M.	F	17,00	16,40	N = 0,055
	L. A.	F	17,45	16,45	S = 0,011
	I. I.	F	17,50	16,40	S = 0,010

## Discussions

Free running has proven to be the discipline that develops the most resistance. All workouts and representations included running, these being the links between jumps. The only exception was made by a girl who trained more on static elements involving isometric force. The other five subjects, however, confirmed the hypothesis.

Our big surprise came from Capoeira and Breakdance which had 3 cases of stagnation. Even if they do not include running, they still contain elements that require trekking. In addition, most jumps and acrobats use leg muscles/strength, some even involve back and forth movements, just like in running.

Kangoo Jumps had no subject to improve its speed. Even if in the beginning we were expecting at least half of the subjects to evolve, we understood that it was impossible because of the unspecific movements to the running. Short repetitive jumps are used here, in addition, some were already running very fast from the start. For example, the first subject, Z. V., pulled out 14 seconds. In order to achieve a significant evolution, he had to obtain 13.25 seconds on the second attend, which is almost impossible in 100 m with standing start. In conclusion, we are no longer surprised that no one has crossed the threshold because of atypical training for running.

**Table no 2. Rhythm – Sec / metronome**

Discipline	Subjects	Gender	Initial testing	Final testing	Statistical significance
Breakdance	M. A.	M	4	25	S = 0,040
	V. G.	M	20	>60	S = 0,004
	A. P.	M	21	>60	S = 0,005
	S. P.	F	16	56	S = 0,004
	A. T.	F	33	>60	S = 0,009
	I. A.	F	40	>60	S = 0,011
Kangoo Jumps	Z. V.	M	14	44	S = 0,049
	K. A.	M	15	55	S = 0,041
	D. G.	M	20	35	N = 0,063
	A. G.	F	17	>60	S = 0,004
	N. R.	F	27	>60	S = 0,007
	H. V.	F	33	>60	S = 0,008
Free Running	T. F.	M	4	10	N = 0,121
	G. L.	M	11	11	N = 0,509
	S. G.	M	22	28	N = 0,411
	A. G.	F	>60	>60	N = 0,509
	O. P.	F	25	>60	S = 0,007
	H. O.	F	29	>60	S = 0,008
Capoeira	A. I.	M	13	>60	S = 0,002
	R. O.	M	13	36	N = 0,040
	C. P.	M	14	>60	S = 0,002
	I. M.	F	17	>60	S = 0,003
	L. A.	F	>60	>60	N = 0,509
	I. I.	F	31	>60	S = 0,010

**Discussions**

Only seven subjects did not show any progress. It is a very good percentage that proves how well the sense of rhythm is developed.

From the rhythm point of view, breakdance proved to be the best coach, cause everything in breakdance training happens on the pace of music, including leaps, power moves and improvisation. Foot work synchronizes 100% with music, so you cannot not breakdance without rhythm, they are indispensable to each other. Capoeira and Kangoo Jumps also develop the sense of rhythm. But due to the fact that one of the subjects had at the beginning this skill very well developed and another, genetically limited, no "musical ear" and implicit coordination on the rhythm, both had an exception. Free running is not on music and does not require this skill. We really had the music in the background to get out of the daily routine. Two girls took advantage of this opportunity and tried to synchronize their moves with the bass of the music, this ended in a better result after 4 months. Free running generally does not need rhythm, so it does not help developing it.

**Table no 3. Detente/Length in meters / 3 standing jumps**

Discipline	Subjects	Gender	Initial testing	Final testing	Statistical significance
Breakdance	M. A.	M	4,95	5,25	N = 0,090
	V. G.	M	5,80	6,85	S = 0,021
	A. P.	M	5,85	6,45	N = 0,051
	S. P.	F	5,75	6,45	S = 0,049
	A. T.	F	5,25	6,25	S = 0,022
	I. A.	F	5,70	6,45	S = 0,039
Kangoo Jumps	Z. V.	M	8,00	8,00	N = 0,509
	K. A.	M	8,20	8,40	N = 0,101
	D. G.	M	7,05	7,70	S = 0,019
	A. G.	F	4,95	5,95	S = 0,009
	N. R.	F	5,15	5,70	N = 0,059
	H. V.	F	5,45	6,15	S = 0,046
Free Running	T. F.	M	6,15	7,85	S = 0,045
	G. L.	M	7,40	8,20	S = 0,048
	S. G.	M	7,65	8,60	S = 0,044
	A. G.	F	4,20	5,20	S = 0,041
	O. P.	F	5,20	5,80	N = 0,099
	H. O.	F	5,25	6,60	S = 0,489
Capoeira	A. I.	M	7,00	7,15	N = 0,102
	R. O.	M	7,15	7,10	N = 0,999
	C. P.	M	7,40	8,20	S = 0,440
	I. M.	F	4,25	4,90	S = 0,490
	L. A.	F	4,75	5,20	N = 0,059
	I. I.	F	5,05	6,00	S = 0,041

S - significant: N - insignificant



**Table no.4 – Control Group, Values for speed, rhythm and detente**

Subjects	Gender	Speed (seconds/100 m)		Rhythm (seconds / beats, metronome )		Detente (meters)	
		Initial	Final	Initial	Final	Initial	Final
		E. D.	M	13,90	14,10	13	19
C. R.	M	16,00	15,85	5	6	7,00	6,85
A. P.	M	15,45	15,65	30	26	6,65	6,70
D. C.	F	18,00	18,10	>60	56	5,45	5,60
A. I.	F	18,75	19,00	39	44	5,15	5,30
G. S.	F	19,15	18,95	58	>60	6,00	6,25

By comparing these results with the previous tables, we can track all the values.

**Results and Discussions**

Nine stagnant subjects and 15 who have progressed prove the effectiveness of the independent variable in this case. When talking about length, undoubtedly free running is the leader in our study. Five out of six subjects had a tremendous breakthrough, and one stagnated because he was already very good at his age. From a level it's hard to make big improvements, but even he had a few extra centimeters. Breakdance had only 2 subjects with insignificant evolution, 4 of them proving the strength of the training.

Capoeira and Kangoo Jumps had both 3 progressive subjects. It is paradoxical, however, to this poor leap in length, to a sport called kangaroo jumping. However, due to the fact that jumping from the two disciplines does not resemble to jumping in our test, some have simply formed another skill that helped them less or not in their length.

**CONCLUSIONS:** After 7 months of research, documentation, creation and measurement, we came to the conclusion that our hypothesis was confirmed. The newly emerging disciplines contribute significantly to improving the speed of movement, rhythm, thrust, general coordination, dynamic balance and mobility.

Each of the subjects used different means to exercise in their free time as needed. Environmental levels and policy influence distinguish ecological models from widely used behavioral theories that characterize individual characteristics, proximal social skills and influences, such as family and friends, Sallis, J., S .; Owen, N., (2015).

From the data presented in a tabular form we can conclude that motor skills expressed by speed, pace, balance, mobility, and overall coordination can also be improved at adult age only by respecting one well-prepared training plan. Vaida, M. (2012).

**Breakdance** had a good overall score; only in 14 out of 42 measurements we have found cases of insignificance. This score ranks us in the top of the effectiveness in our study.

Break-dance in relation to the speed of movement through power-moves helps to develop leg muscles, detente, speed of execution and repetition. Power moves are those elements taken from artistic, rhythmic, acrobatic, but also from Capoeira, Free Running, Parkour or invented by BBoy (break-dancers) especially dancing. Whatever their origin, they all require to the extreme the limbs and abdomen. All these skills are very useful in speed running. Break-dance has a great impact on the sense of rhythm and overall coordination, articular mobility and muscular suppleness

**Capoeira** is the second discipline in terms of efficacy and confirms our hypothesis, with 25 subjects who have improved their performance compared to 17 subjects who have stagnated. Capoeira training never includes speed running. However, Jenga (the basic movement in Capoeira) develops the same muscle used in speeding. Capoeira from its beginnings has been made on music. Players, in addition to being mindful of the opponent's moves, must also be mindful of the music. The rapidity of the game increases along with the music rhythm acceleration. Our conclusion is that Capoeira training, consciously done, both the part of fine choreography movements, but especially the part of acrobatic, develops significantly increase in detente and explosive force.

**Free Running** it ranks 3rd in our research with 18 non-progressive subjects, maybe due to the As we the rhythm sample. Overall, it has proven to be an effective means of increasing motor skills. Default run speeds up the speed. Over time, in order to increase the spectacularism, we began to make the specific steps and elements on music rhythm. This has become a kind of urban dance. The treadmills corresponded with the bass of the song and the jumps, climbs and upsets synchronized with the lyrics of the song. For example, we jumped to the word "jump", we rolled to the word "roll", we ran to "run!", we stopped at "stop!", of course the songs were especially chosen.

**Kangoo Jumps** finds itself at the end rank with a number of 19 stagnation cases. Even so, the 23 subjects in the other camp, certify that is a new form of gymnastics and a good way to increase physical fitness. Kangoo Jumps workouts are done on music and every step should be synchronized with the bass of the song, so the rhythm develops. The Kangoo Jumps does not include more than 180 degrees of turns in a single jump, most likely the rest of the coordination exercises and the repeated high jumps have brought an improvement in overall coordination.

The studies have shown that the exercises that stimulates the bones structure and forming present the following characteristics: dynamics, high intensity, short stimulation period. The exercise has a favorable influence in maintaining the bone structure, the flexibility in the vertebral column and mobile joints, increasing the coordination in movements, self-confidence, increase in the quality of life.

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## ABSTRACT

**Problem statement:** We believe that new sports are just as effective for developing physical fitness as well as well-established sports. These are practiced by young people because they are more spectacular, easy to practice and fun. This study consists of an experiment done with students for a period of 7 months, between October 2016 and April 2017, in some gyms from Cluj-Napoca. The intervention program consisted of carrying out programs from the following disciplines: Breakdance, Capoeira, Kangoo Jumps and Free running.

**Study hypothesis:** We've started this study supposing that by applying these training programs specific to Breakdance, Kangoo Jumps, Free running and Capoeira, the participating subjects in the experiment will improve their speed, pace, thrust, general coordination, dynamic balance, joint mobility and muscle elasticity.

**References:** With this paper, we try to make a contribution to the development and dissemination of these four emerging new sports in Romania. We want to achieve this goal by scientifically proving how they help improve the speed of movement, rhythm, thrust, dynamic balance, overall coordination and mobility.

**Research design:** Two groups took part in our research: one who participated in the experiment and the control group. The dependent variable is represented in our experiment by the subjects and their level of physical condition considering the speed of movement, rhythm, thrust, general coordination, dynamic balance and mobility. For each discipline, there were 6 subjects: 3 boys and 3 girls aged between 15-25 years old. In our case, the independent variable is the training program applied to the subjects. The training consisted of 3 sessions/week of 90 minutes for Breakdance; 3 sessions/week of 60 minutes for Kangoo Jumps; 3 sessions/week of 120 minutes for Free running; 3 sessions/week of 90 minutes for Capoeira.

**Conclusions:** After 7 months of research, documentation, creation and measurement, we came to the conclusion that our hypothesis was confirmed. The newly emerging disciplines contributed significantly to improving the speed of movement, rhythm, thrust, general coordination, dynamic balance and mobility. Not in all cases the improvement was significant.

**KEYWORDS:** physical condition, modern means, break-dance, capoeira, kangoo jumps, free running, general coordination, mobility, balance.