

## EXPERIMENT ON THE GROWTH RATES OF DEVELOPMENT OF SPECIFIC GAME OF HANDBALL DRIVING QUALITIES, THROUGH SPECIFIC MEANS ATHLETICS, TO JUNIORS II ECHELON

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### Abstract

**Purpose.** The purpose of this paper is to present and demonstrate one of the effects of increasing development indices, specific driving qualities of handball game, namely athletics, as well as to contribute to the enrichment of research in this area.

**Methods.** In order to achieve the experimental study, as follows from the paper's title, there was used athletic specific means which we have classified them according to the driving quality of which development was followed such runs were used in all forms and tempi, variable distances sprints, passing at speed, jumping, throwing, starts from different positions, combinations.

**Results.** The driving and technical samples set were: 1.-Standing long jump (S.L.J.)/ P=0,05; 2.-Speed running at the 30m distance/ P=0,11; 3.-Dribbling through cones/ P=0,21; 4.-Handball ball throwing at distance/ P=0,79; 5.- Ten steps jump (min. 20 m)/ P=0,92; 6.-Resistance running at the 1000 m distance/ P=0,05.

**Conclusions.** The purpose and tasks research have been completed because, after initial and final tests, there is progress, so it appears that the documentary was made good, and the selected samples were representative for their purpose.

**Key words:** indices, driving qualities, growth, development.

### Introduction

Handball game theory and methodology, studying a large sphere of problems relating to the school handball game, at the mass, at the base mass of performance sport level, at the performance and high performance.

The handball game represent a harmonious combination, between natural movements (running, jumping, throwing), on the one hand, and the motor dexterity and ability, simples, attractive and accessible, on the other hand.

At the same time, the handball game be deployed, to the fund of intense psychical solicitations, which have a strong educative and formative character.

The handball game, scientific practiced, are beneficial and important tends to health strengthen, to

As a handball player develop the moral and volitive qualities, discipline, sens of duty, spirit of cooperation with their team-mates, with the referees, coaches and even the public.

As a performance sport, the handball game asks of the participants to make a intensive work, to cope with the tasks of training, very hard, whose solution the maximum strain of all physical, moral and intellectual abilities.

We can say that the handball game learn to the individual to be disciplined, orderly, industriously, self-consciously about collective success, ambitious

multilateral develop of physical and mental capacities, to the acquisition of motor dexterity and specific game knowledge, by technical and tactical.

Was developed and a training concept, which suffers changes and improvements continuous, made from studies and theoretical researches, practical and applied.

In conclusion, we can say that the main trend of the handball game, is to be practiced totally of a scientifically bases, and create and implement as a richer technical-tactical baggage, and adapting of the purpose of each competition, namely to score many points in the enemy gate.

It can be said that the main features of the handball game are freedom, the limits of space and time, the effort and pleasure.

and eager for self.

The selecting and training work, a handball team, remains and must be one of the basic problems, of the teachers activities from each school, with sport profile or school club, which problem, like importance, will be located at the same level with teaching action performed in the normal lessons and sports training.

### Content

It is known that the assumptions are temporary solutions of the scientific research problems.

Generally hypothesis represent own uncertainties explanation, in scientific research her

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taking place a provisional solution of an provisional response to the question of the problem under research.

The hypotheses of this paper were:

-- If the means proposed, selected and implemented, can lead to very significant increase of a motor qualities indices development, specific handball game, verified and certified by the control samples, report to their values, proposed by Romanian Federation of Handball (R.F.H.).

-- If scientifically effected, the child-juniors training can lead to assumptions development, to a fair and harmonious development, and to increase of a motor qualities indices development.

Proficiency knowledge a morpho-functional and psychical particularities, of the each child with which working, is the only way what allow avoid of the two most common mistakes in sport activity, namely over-exaggerated efforts of the body and excessive caution, because that the preparation is maintained on a level bellow by the child's possibilities.

In terms of developing motor qualities, can be said that the main motor solicitations forms, are represent by the motor qualities, that can be divided in conditional and coordinative or coordination qualities.

In this complex gear, an extremely important role it have the central nervous system and particularly cortical floor, that performs the analysis and synthesis of information from the periphery, on which elaborate on the appropriate commands and kinaesthetic analysers, tactile, audible and optical, which receiving environmental changes and transmit them to the cortex nerve, in form of nervous inflows, of them adding the numerous mechanisms of feed-back, in which an important role they have some central nervous and vegetative formations, example being the Reinshaw neurons by the spinal marrow, endocrine glands and the concentration levels of a series of substances, which provides a whole body homeostasis.

Dividing the training period, is determined by a series requirements, by method nature, which define the respective phases.

As a result, the entire process of children and juniors preparation, was divided into the following stages:

- first stage – beginners;
- second stage – advanced;
- third stage – perfected.

In the first stage the children discover first notions of technique and tactics learn the first rules of the game so basically start play of the handball game.

So, from the above, show that preparatory stages to the this echelon, beginners, is learning and reinforcement.

In the second stage, children will run a more comprehensive training program, tactical and technical content what be learned, is much wider, and physical preparation level being much improved.

This stage corresponds and with official competition apparition, so the fight sports with a real and the unknown enemy.

For this stage is defining the consolidation and learning.

In the third stage, appear two lines defining, namely game model and training model of the juniors.

Beginning with the performance echelon of advanced juniors, game models provide progressively increasing of the technical and tactical baggage, and a growth indices of development og game specific motor qualities.

Principle is defined as a basic idea of a doctrine or thesis, which structure and guiding one knowledge activity or by practical nature, from which drift a series consequences in the action plan or behaviour. (A. Nicu, 1993)

As a general definition, sports training is defined as "pedagogical process, systematic developed and continuous gradually by adapting to the physical efforts of the human body, technical, tactical and psychical intense, to obtain the best results, one of the forms of practice in the competitive regime, of physical exercises." (I. Kunst Ghermănescu, 1983)

The sports training concept, have subordinates the training basis, (all laws and principle underlying and conditioning sports training), established by the sports training theory (system of principles and methods which structured and compose sports training), as training principles (basic ideas by the pedagogical, psychological, physiological, hygienic order, and others which structures making and driving of the training process).

Sports training involves certain components, namely:

- a). educational component, by the teaching process which operating;
- b). biological component, by the objectives effects in functional development plan and as adaptative level of human body;
- c). psychological component, by the character features, moral features, emotional features implications, of the athlete personality;
- d). sociological component, by the relationships and his integration mode and homogenization, in the social, economic and cultural environment;
- e). hygienic component, by the specific nutrition conditions, rest, comfort, and by environment where the athlete is trained and recover;
- f). ethical component, by the fair-play ideals, total employment in training and competition;

Going of the assumption that sports training is, above all, a teaching process with multiple implications, we believe is useful to distinguish the principles into two big category, namely: general principles and specific principles.

Such sports training theory, present the following general principles:

- accessibility principle;
- continuous effort principle;
- cyclic structure of effort principle;
- conscious participation principle;

- systematization principle;
- intuition principle;
- individualization principle;
- through knowledge principle.

The specific principles are those which act mainly in sports training, and use them in other activities whose generate a different types of performances.

We can include following specific principles, namely:

- continuity principle;
- optimal solicitations and increase or in steps, of the efforts principle;

This principle, expected increasing solicitation degree of the body by the effort increasing, when using the same means or by changing them, the body react strongly to excitatory to them is not normal.

- priority effort specific competitive principle;

Sports training factors are classified thus:

a). Technical preparation factor is represented by all means with a identical structure or similar, of motor actions provided by the competition rules, by which athlete or team reflected differentiated performance as specific, or more simply, all the means, which by their specific form and content allow to practice of sport branches, according to contest rules and form sport branches technique, those.

b). Tactical training factor involves complex, adequate and effective capitalization a technical and tactical preparation, of a team, in the contest deploy in concordance with conditions of adversity and with predetermined performance objectives, namely title, record, qualification, special place, etc.

c). Theoretical training factor represent “all the information learned from athlete to knowledge and explain all the principle, rules and methods what determined increase effort and performance capacity, and contest or next game anticipating for adequate approach” (A. Nicu, 1993)

This factor is one of the elements through which realise the “invisible training” his tasks being instructive-educative.

d). Psychological training factor, “determined by the training means and with educational actions, increased mental capacity, to allow of athlete deploy of efficiently actions and obtain a superiors results in competitions”.(M. Epuran, 1982)

Driving qualities are body features, materialized in the ability to making of the movement actions with some indices by speed, force, resistance and ability or skill, are one native character whose initial level of manifestation depends by the genetic hereditary fund.

Driving qualities are divided into:

- Basic motor qualities, speed, force, resistance, ability or skill, to which is added, according with some specialists flexibility and mobility;
- Specific motor qualities, those involved in the practice of sport branches, or the exercise some professions or trades, them resulting from combining of two or more basic motor qualities.

For each basic motor qualities, exists one specific feature, namely:

- 1). For speed – rapidity, swiftness;
- 2). For skill or ability – complexity degree or movement precision;
- 3). For resistance – effort duration;
- 4). For force – load.

Speed represents the human ability to execute one move with a greater rapidity and frequency.

Skill is the capacity to achieve and execute necessary movement correctly, quickly adapted to the situation.

Resistance can be defined as the body ability to be laid down with a relatively long duration and relatively high intensity, keeping constant indices, of optimal efficiency.

Force represent the neuromuscular apparatus capacity to defeat one resistance by movement on muscles contraction.

Tasks research were following:

- action of documentation and information;
- establish working hypotheses;
- initial testing of children;
- completion of the training program;
- final testing of children;
- analysis and interpretation of results;
- establish the conclusions and recommendations.

The experiment being realise in period 20 october 2010 – 15 mars 2011, at high school sports program Brăila.

Anthropometric measurements was: height, weight, scale, length of palm.

Driving and technical samples was:  
 1. Standing long jump;  
 2. Speed running on the distance of 30m;  
 3. Handball ball throwing away with momentum of three steps;  
 4. Ten steps jump (minimum 20m);  
 5. Dribbling through cones;  
 6. Resistance running of the 1000m distance.  
 Statistic indicators used was:  
 The sum ( $\Sigma$ ):  $\Sigma = X_1 + X_2 + X_3 + \dots + X_n$

Arithmetic media:  $X = \frac{\times 1 + \times 2 + \times 3 + \dots + \times n}{n}$   
 Standard deviation (S):

$$S = \pm \sqrt{\frac{\sum (\times i - \bar{x})^2}{n - 1}}$$

The coefficient of variability (Cv):  $Cv = \frac{S * 100}{\bar{x}}$

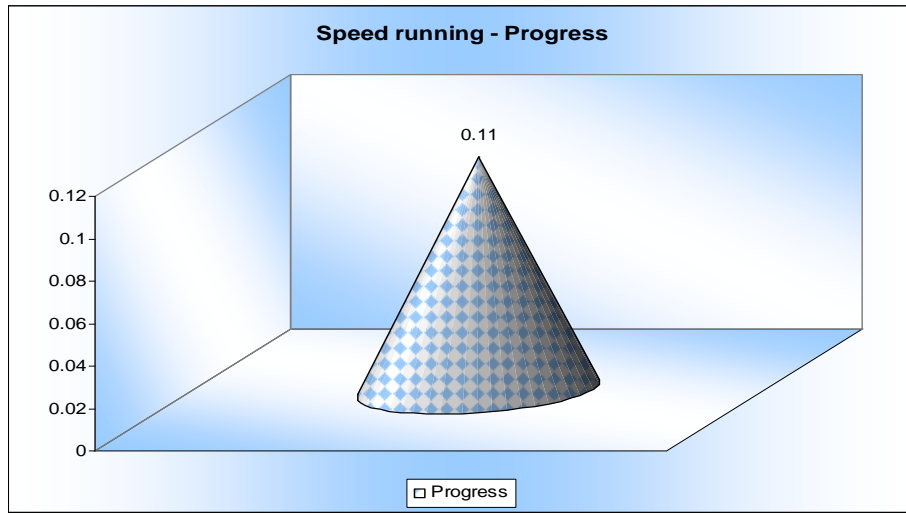
Values of the variability coefficients may be influenced by some factors such as number of cases and distribution of results.

**Motricico-technical test**

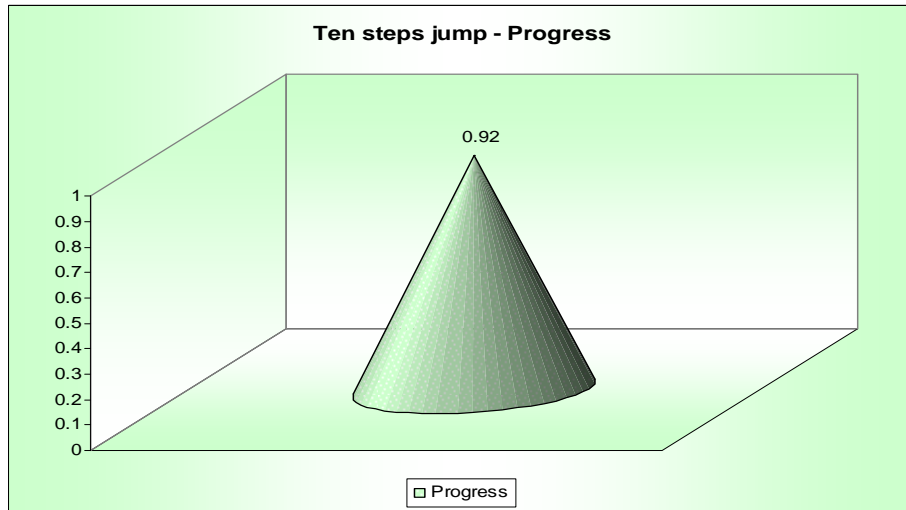
**Table nr. 1**

| Nr. crt.              | Name and prename | Speed 30m (sec) |                |                | Ten steps jump 20m (m) |                |                | Dribbling through cones 30 m (sec) |                |                | Standing long jump(m) |                |                | Throwing handball ball away (m) |                |                | Resistance 1000m (min, sec) |                |                |
|-----------------------|------------------|-----------------|----------------|----------------|------------------------|----------------|----------------|------------------------------------|----------------|----------------|-----------------------|----------------|----------------|---------------------------------|----------------|----------------|-----------------------------|----------------|----------------|
|                       |                  | T <sub>i</sub>  | T <sub>f</sub> | V <sub>R</sub> | T <sub>i</sub>         | T <sub>f</sub> | V <sub>R</sub> | T <sub>i</sub>                     | T <sub>f</sub> | V <sub>R</sub> | T <sub>i</sub>        | T <sub>f</sub> | V <sub>R</sub> | T <sub>i</sub>                  | T <sub>f</sub> | V <sub>R</sub> | T <sub>i</sub>              | T <sub>f</sub> | V <sub>R</sub> |
| 1                     | Manea Cristian   | 4,7             | 4,6            | 4,3            | 19                     | 21             | 20             | 7,8                                | 7,6            | 7,3            | 2,18                  | 2,22           | 2,20           | 22                              | 23             | 25             | 4'30"                       | 4'25"          | 4'20"          |
| 2                     | Popescu Alin     | 4,8             | 4,6            | 4,3            | 20                     | 20             | 20             | 7,5                                | 7,5            | 7,3            | 2,22                  | 2,20           | 2,20           | 21                              | 22,5           | 25             | 4'50"                       | 4'40"          | 4'20"          |
| 3                     | Sarcă Florin     | 4,3             | 4,3            | 4,3            | 18                     | 19             | 20             | 7,6                                | 7,4            | 7,3            | 2,10                  | 2,15           | 2,20           | 20                              | 21,5           | 25             | 4'40"                       | 4'40"          | 4'20"          |
| 4                     | Strungariu Paul  | 5,2             | 4,9            | 4,3            | 22                     | 22             | 20             | 7,9                                | 7,5            | 7,3            | 2,05                  | 2,15           | 2,20           | 23                              | 23             | 25             | 4'20"                       | 4'20"          | 4'20"          |
| 5                     | Trică Mădălin    | 4,7             | 4,5            | 4,3            | 17,5                   | 18,5           | 20             | 8,1                                | 7,7            | 7,3            | 1,95                  | 2,00           | 2,20           | 22,5                            | 23             | 25             | 4'40"                       | 4'35"          | 4'20"          |
| 6                     | Frăţilă Ionuţ    | 4,8             | 4,7            | 4,3            | 18,5                   | 19,5           | 20             | 7,7                                | 7,4            | 7,3            | 1,90                  | 1,95           | 2,20           | 21,5                            | 22             | 25             | 5'                          | 4'45"          | 4'20"          |
| 7                     | Buga Adrian      | 4,5             | 4,5            | 4,3            | 21                     | 22             | 20             | 8,2                                | 7,8            | 7,3            | 2,00                  | 2,00           | 2,20           | 26                              | 26             | 25             | 4'35"                       | 4'30"          | 4'20"          |
| 8                     | Brânză Georgian  | 4,7             | 4,6            | 4,3            | 20                     | 21             | 20             | 7,4                                | 7,2            | 7,3            | 2,15                  | 2,18           | 2,20           | 24,5                            | 25             | 25             | 4'10"                       | 4'10"          | 4'20"          |
| 9                     | Boboc Cristian.  | 5,0             | 4,9            | 4,3            | 18                     | 19             | 20             | 7,6                                | 7,4            | 7,3            | 2,00                  | 2,08           | 2,20           | 22,5                            | 23,5           | 25             | 4'45"                       | 4'40"          | 4'20"          |
| 10                    | Zamfir Ionuţ     | 4,8             | 4,7            | 4,3            | 17,5                   | 18,5           | 20             | 7,9                                | 7,7            | 7,3            | 1,90                  | 1,94           | 2,20           | 21,5                            | 22             | 25             | 4'25"                       | 4'20"          | 4'20"          |
| 11                    | Balaban Ionuţ    | 5,1             | 4,9            | 4,3            | 17                     | 19             | 20             | 8,0                                | 7,8            | 7,3            | 2,10                  | 2,14           | 2,20           | 26                              | 27             | 25             | 4'15"                       | 4'10"          | 4'20"          |
| 12                    | Dogărescu Marius | 4,4             | 4,5            | 4,3            | 18                     | 18             | 20             | 7,5                                | 7,5            | 7,3            | 2,25                  | 2,30           | 2,20           | 23                              | 24,5           | 25             | 4'45"                       | 4'30"          | 4'20"          |
| Indicatori statistici | $\bar{X}$        | 4,75            | 4,64           | —              | 18,87                  | 19,79          | —              | 7,76                               | 7,54           | —              | 2,06                  | 2,11           | —              | 22,79                           | 23,58          | —              | 4,35                        | 4,30           | —              |
|                       | S ±              | 0,24            | 0,18           | —              | 1,55                   | 1,38           | —              | 0,25                               | 0,18           | —              | 0,12                  | 0,11           | —              | 1,87                            | 1,70           | —              | 0,15                        | 0,12           | —              |
|                       | Cv               | 5,18            | 4,05           | —              | 8,23                   | 7,02           | —              | 3,31                               | 2,42           | —              | 5,79                  | 5,46           | —              | 8,32                            | 7,22           | —              | 3,44                        | 2,78           | —              |
|                       | P                | 0,11            | —              | —              | 0,92                   | —              | —              | 0,21                               | —              | —              | 0,05                  | —              | —              | 0,79                            | —              | —              | 0,05                        | —              | —              |

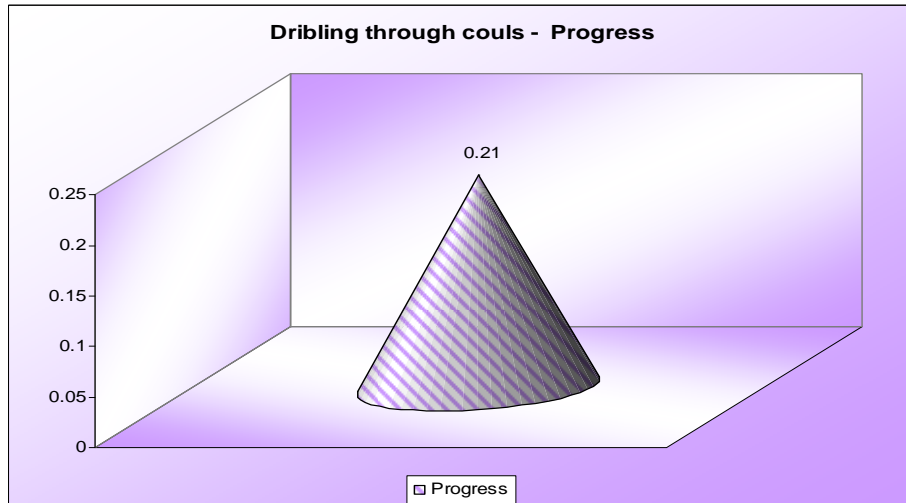
Graphic nr. 1



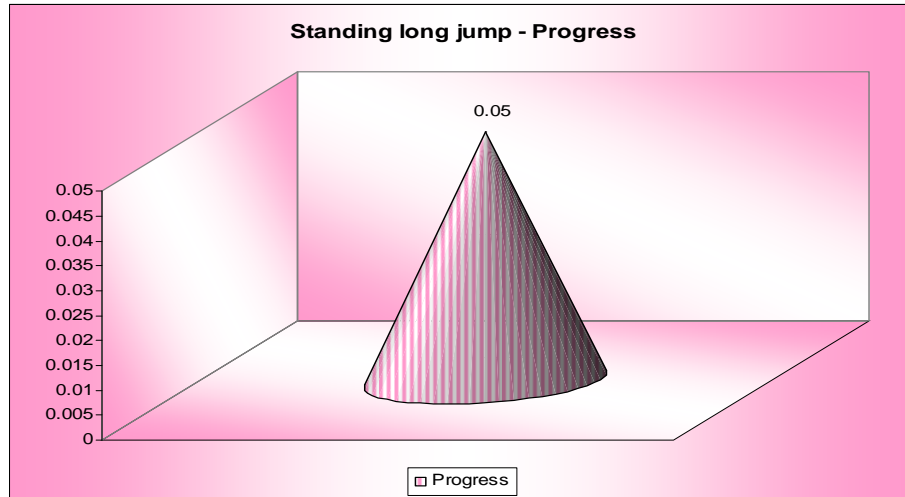
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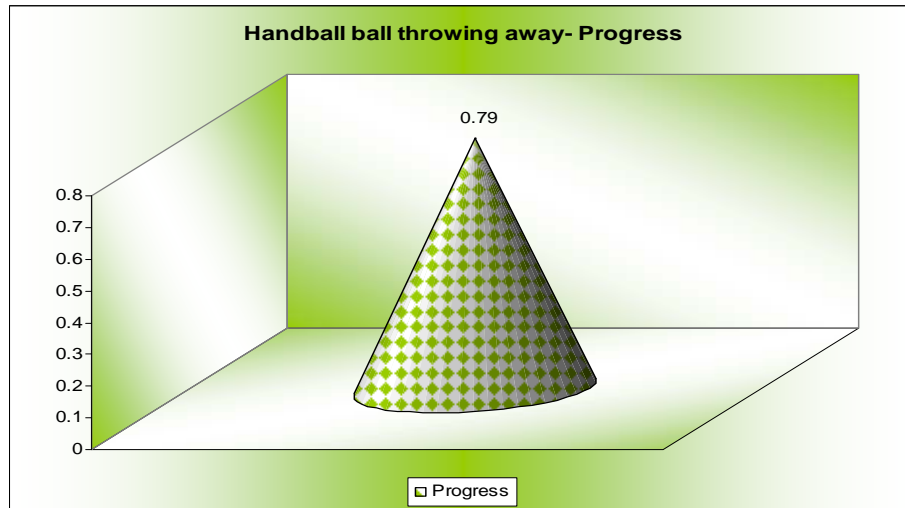
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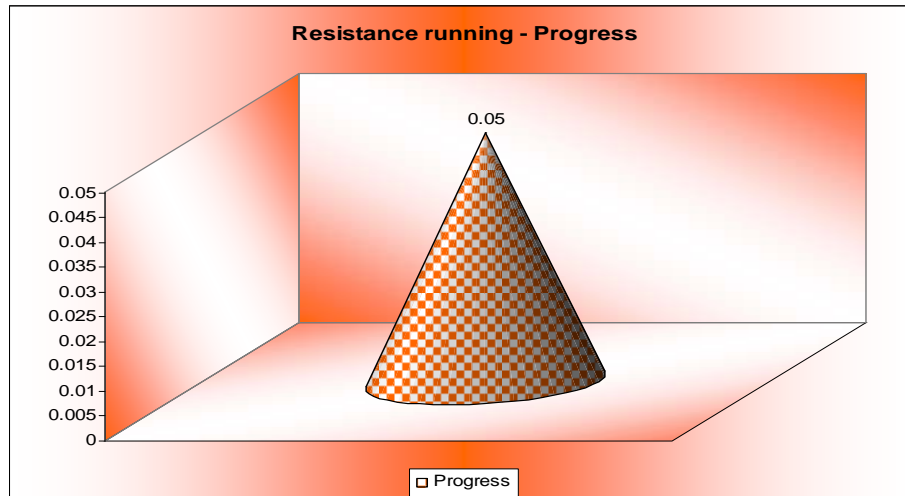
Graphic nr. 4



Graphic nr. 5



Graphic nr. 6



Charts above shows the progress of children juniors third, from initial testing to final testing.

#### **Coclusions**

The means used, were chosen, selected, measured and then applied to both features of the athletes at this age and on the objectives propose at this level.

Research has found analyzing and systematizing the preparation means, to indices increase development of motor qualities specific handball game, proved to be efficiency and specific means of athletics proposed.

Also research showed that approach training athletes at this echelon, programming and planing training activity, must be done, only after a through knowledge of the students collective with which work, and only after personal training, prior of theoretical and profound scientific basis.

Hypotheses proposed to be verified and demonstrated have been validated, whereas the development indices of motor qualities specific handball game, have increased, results obtained as the control samples, demonstrating that.

It is well supporting control samples, to perform after each period before competition.

It is good that at juniors third level, the teacher-coach, must possess the ability to prepare planning documents, consist of methodologically and datailed records documents.

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