

NATIONAL UNIVERSITY OF PHYSICAL EDUCATION AND SPORTS

Bucharest, Romania 2016

Abstract of the Ph.D. Thesis

STRATEGIES TO IMPROVE SPORT OUTCOMES OF JU-JITSU PRACTITIONERS IN DUO- DEMONSTRATION AND FIGHTING SYSTEMS IN ASPIRANTS AND JUNIORS

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Part I: **THEORETICAL AND METHODOLOGICAL FOUNDATION OF THE WORK**, includes 6 chapters: **Chapter 1:** Introduction to the Theme Issues; **Chapter 2:** Issues Concerning the Technical and Methodological Evolution of Ju-Jitsu; **Chapter 3:** Ju-Jitsu Learning Process; **Chapter 4:** Theoretical Approaches on Training Components in Ju-Jitsu; **Chapter 5:** Original Theoretical Issues on Exercises and Methods Used in Ju-Jitsu Specific Strategy Concerning Sports Outcomes Improvement; **Chapter 6:** Theoretical Conclusions.

Motivation for Choosing the Theme

Approaching the study of martial arts, and more specifically of ju-jitsu, from a very early age, going through countless technical traneeships, didactical certification examinations and/or national and international competitions, we had the opportunity to note that, very often, competition ju-jitsu is held under the empirical form, many *ju-jitsu-ka* grounding their competitive participation more on various physical skills (strength, lengthening, body weight, etc.) and to some extent on the technical skills, and in a lesser extent on the scientific training scheduled in accordance with modern sports training.

The lack of some theoretical material specific to the competition system in ju-jitsu is also negatively reflected in athletes' outcomes.

This theme is a necessity in preparing future champions and this approach provides a strong foundation to continue to achieve good result in the next age level.

Given this fact, we decided to develop a specialty paper in this area, paper that is intended to be a personal contribution to the amplification of knowledge specific to the modern sports training for this style and the development of potential guidelines that have as main purpose the increase in sports and motion performance in ju-jitsu.

Scope of the Research

The approach of training in a scientific manner, the portray of the psychomotor profile specific to each competition system, should reorient the modality of approach to trainings, competitions and lead to superior competition results.

The scope of our research is to analyse the impact on motion and sports performance by introducing some psycho-physical training means adapted to current requirements of competition ju-jitsu, applied during the 2014-2015 competition year, with features specific to the fighting and duo-demonstration system.

Research Objectives have resulted in:

- highlighting the theoretical and methodological aspects of the two competition sections corresponding to the ju-jitsu style;
- defining the profile of competitors participating in the *duo-demonstration* and *fighting* systems;
- identifying, implementing and capitalizing on the most effective means and measures of psycho-physical-technical-theoretical training for components of the Budo Seishin club representative teams, engaged in duo-demonstration and fighting competition systems;
- developing a training strategy specific to each section of the contest, with the aim of enhancing sports performances;
- developing a paper with the highest academic standing, that is useful to specialists in the field, and implicitly to increasing sports and motion performances etc.

Theoretical Conclusions

The knowledge of the training factors in developing strategies is the core method used in future training methods.

Development of motor skills should be adapted to each competition system, complying with modern requirements of sports training.

Constantly involvement in training of the mental factor helps athletes to show self-control and increased safety while performing motor tasks.

Knowledge of the type of effort specific to ju-jitsu can support coaches to guide athletes training in a manner specific to the style.

Moral-ethical and theoretical-methodical training can positively affect athletes' temperament, competition results and developments in the individual's extra-sports life.

Customization of training methods in ju-jitsu is a novelty that comes to support the increase in sports performances.

The laborious analysis of scholarly literature has revealed that the proposed theme is not treated thoroughly enough, which led us to conclude that the interest in upgrading and modernizing training methods in competition ju-jitsu should be a requirement for improving sports results for this style.

Part II:

PRELIMINARY STUDIES ON TEMPERAMENT, TECHNICAL AND PSYCHOMOTOR PROFILES OF ATHLETES OF FIGHTING AND DUO DEMONSTRATION SYSTEMS IN JU-JITSU, consists of 3 chapters: **Chapter 7**: Preliminary studies on temperament, technical and psychomotor profiles of athletes of fighting and duo demonstration systems in ju-jitsu, **Chapter 8**: Analysis and Interpretation of Results, **Chapter 9**: Ju-Jitsu Practitioner Profile.

Scope of the Preliminary Research

The scope of the preliminary study is to outline the technical, motor and temperamental profile of the ju-jitsu athlete within the fighting and duo-demonstration systems.

Onset and conduct of the actual study has started from the following general premise: the knowledge of the technical and motor level, the type of temperament, the level of aggressiveness of the athletes and the technical characteristics of ju-jitsu can help guide the training of athletes towards the competition system for which they feel more propensity.

Objectives:

- highlighting age, level of motor development and seniority to activity;
- highlighting the temperamental type, the type of emotions that define the athlete and the level of aggressiveness of each subject;
- analysis of the competitive systems and highlight of the technical-tactical body of knowledge required for the participation in sports competitions;
- development of the *ju-jitsu-ka* motor profile in *fighting* and *duo-demonstration* systems, found after applying the tests and interpreting the results.

For this study, we have selected 20 experienced athletes, practicing the ju-jitsu style, athletes addressing one or both systems analysed in the paper. Their experience ranged between 3 and 10 years of practice. They were divided into two groups: Group A, made up of athletes with superior results in the duo-demonstration system and Group B, consisting of athletes with superior results in the fighting system.

This stage of our scientific demarche aimed to select the most representative practitioners who can cope with the rigors of high performance competitions.

The preliminary research was conducted within the Budo Seishin martial arts club in Bucharest. During the period February 11th to 28th, 2014 we have applied the psycho-motor tests and psychological questionnaires on the two groups under study.

The preliminary research included two studies:

- **Study 1. Development of the Ju-Jitsu Practitioner Profile**

In carrying out this study, we addressed the following directions:

- **analysis of data on age, seniority and somatic development.**

After centralizing the data on age, weight, height and seniority in training, it has been observed that subjects of both groups have similar values, concluding that the physical-technical profile is relatively uniform.

- **analysis of the temperamental type and the level of aggressiveness.**

Tests and assessment tools used in this analysis were:

- questionnaires to highlight temperament traits;

- questionnaire to highlight the level of aggressiveness and emotiveness;

- **analysis of the level of psycho-motor development.**

To study the level of motor skills of athletes, a series of tests have been selected:

- psycho-physical route;

- dynamic flexibility test;

- skipping rope test;

- test for measuring coordination abilities;

- balance test - "FLAMINGO";

- distance assessment test;

- speed - coordination test "NAVETA / SHUTTLE" (10 X 5 m);

- temporal and spatial orientation test - "MATORIN"

- "in square" test.

To analyse the results statistically achieved, we used the non-parametric Mann-Whitney U test.

In order to have a sound ground on the profile of the fighting practitioner, but also and to have accurate information to support the development of the strategy for improvement of sports results, we also developed **a study on the percentage of techniques used in ju-jitsu at national and international level for the fighting system.**

Preliminary Research Findings

After analysing the results of these studies, the following conclusions stood out:

- in terms of age, seniority of training, height and weight, the subjects start on almost equal positions. According to the measurements, the two groups under study (A and B) registered similar overall averages, which confirm that the level of development and experience of the athletes is relatively uniform;

- the applied questionnaire reveals that in the group addressing the fighting competition system selected athletes are non-emotional and balanced, with a sanguine and phlegmatic temperament, while athletes activating in the duo-demonstration system are choleric, passionate, phlegmatic, sanguine;

- we believe that any type of temperament is suitable for practicing ju-jitsu as a means of leisure, but for high performance, in the case of the sporty profile of the practitioner addressing the duo-demonstration section the best combination of temperament would be: **choleric-choleric**, sanguine-phlegmatic and phlegmatic-choleric, this being obvious from the study of temperaments and the personal practical experience both as a coach and as an athlete.

- for the athlete addressing the fighting system, the best temperament would be: sanguine and phlegmatic;

- in terms of aggressiveness, according to the non-parametric Mann-Whitney U test, between the two groups it was found that there are no statistically significant differences in terms of physical and verbal aggressiveness and there is little difference to medium in terms of anger, madness, hostility and total aggressiveness for athletes in Group A, compared to Group B.

- the analysis of the results of the psycho-motor tests highlighted that athletes in Group A have superior performances in the psycho-physical route and the Shuttle test, while athletes in Group B obtain better results on tests of flexibility, measurement of the coordinative capabilities and "in square". In balance, assessment of distance, time-space orientation and skipping rope tests the two groups have recorded similar values. Following this analysis, it appears that the motor profile of athletes presents a common general framework and some distinctive elements which recommended the athlete for a particular competition system.

- in terms of the study on technical content and its percentage in the fighting system, by analysing the two competition systems, namely the evolution of athletes in competitions at national level and the evolution of athletes internationally, we found very high technical differences: in international fighting (male + female) there are a total a number of 1,992 actions completed in ippon, and at national level, only 1,256, which demonstrates that the technical accuracy in our country is much lower than at international level. In the second and third part of the fight, the technical accuracy remains constant at international level - emphasizing more effective and spectacular techniques, due - undoubtedly, to the superior psycho-motor training level.

After the completion of these research studies, we have externalized the ju-jitsu-ka profile at general level, and then we customized it for the fighting

system and the duo-demonstration system while also defining personality traits, according to tests carried out.

Part III:

EFFECTIVENESS OF DIFFERENTIATED TRAINING OF PRACTITIONERS IN FIGHTING AND DUO-DEMONSTRATION SYSTEMS, comprises 4 chapters: **Chapter 10**: Operational Design of the Research, **Chapter 11**: Results of the Experimental Research, **Chapter 12**: Applied Intervention within the Two Competition Systems, **Chapter 13**: General Conclusions, **Chapter 14**: Elements of Originality, Research Limits and Dissemination of Results.

Scope, Objectives and Tasks of the Research

The scope of the research aims at highlighting the effectiveness of training practitioners in fighting and duo-demonstration systems.

Monitoring and scientific conduct of training shall highlight the importance of the proposed methods in training and the value added to motor and psychic skills, aspect leading to superior results in competitions.

Objectives

While carrying out the research at this stage, we aimed at reaching the following objectives:

- development of the applicative by identifying, implementing and capitalizing on the most effective methods and measures of psycho-physical training, but also technical-theoretical-tactical training of the members of the Budo Seishin club representative teams involved in the two systems of competition;
- development of the content of the general, technical-tactical and specific training programs specific to the addressed systems.

Research Hypotheses

- the use in the training of some specific and non-specific programs and methods, selected and adapted to the peculiarities of fighting and duo-demonstration systems may determine the optimization of the psycho-physical and technical training process specific to the competition ju-jitsu.

- the sharp implementation of psychological training methods may decisively influence the level of self-confidence and indirectly improve performances in both competition systems.

In assessing the experimental research, we used the following tests:

- psycho-physical route;
- dynamic flexibility test;
- skipping rope test;
- test for measuring coordination abilities;

- "Flamingo" balance test;
- distance assessment test;
- "Naveta / Shuttle" speed - coordination test;
- "in square" test;
- "Matorin" temporal and spatial orientation test;
- test for measuring the level of self-confidence in their own forces.

Research Stages

According to the original schedule for the conduct of the research, our scientific approach was conducted as follows:

- *initial testing application in February, 2014:*
- *intermediate testing application in August, 2014:*
- *final testing application in February, 2015:*

Research Subjects

For the development of this research, we used 20 subjects falling into the age groups aspirants aged 15-18 and juniors aged 18-21, divided into two research groups called the control group and the experimental group. Research was held in Bucharest at the Budo-Seishin martial arts club.

Research Findings

The research hypothesis according to which: "*the use in the training of some specific and non-specific programs and methods, selected and adapted to the peculiarities of fighting and duo-demonstration systems may determine the optimization of the psycho-physical and technical training process specific to the competition ju-jitsu*" was **partially confirmed** and stands on the following aspects:

- results of the experiment revealed statistically significant developments within the experimental group in three tests (flexibility test, coordination abilities test and Matorin test) and in four other tests it was noticed a consistent difference in the progress of the experimental group compared to the control group, the evolution in the two groups maintaining similar trends in the "Shuttle" speed test and the "in square" agility test.

- the level of sports performance of subjects in the experimental group were very good, all subjects being national champions, some of them achieving outstanding results in the Balkan Championship (Balkan champions and vice-champions) and three of them have participated in world championships where two of them ranked 3rd and another one ranked 7th, getting medals in both competition systems. (Appendix no. 13: Results in competitions)

As per the second hypothesis, according to which "*the sharp implementation of psychological training methods may decisively influence the level of self-confidence and indirectly improve performances in both competition systems*" **was confirmed**, research results highlighting this:

- in the self-confidence test, although in the initial assessment they earned values were approximately equal (24.6 points the control group and 25 points the experimental group), in the final assessments, due to the methods used, the subjects of the experimental group improved their level of confidence as compared to the control group (35.7 points the control group and 37.7 points the experimental group).

The general conclusions of the thesis highlight the following issues:

- the proposed theme is not treated very broad or at all in the scholarly literature and the interest in upgrading and modernizing training methods in competition ju-jitsu is a requirement to improve sports results in our country, specific to this martial style;

- knowledge of the training factors in the development of strategies is the crucial element in accessing future methods used in the training for accession to high performance;

- development of motor skills should be adjusted according to each competition system, being in line with the modern requirements of sports training;

- the use of unconventional training methods captures and motivates ju-jitsu-ka for a more dynamic approach to specific training;

- constant involvement in the training of the psychic factor helps athletes to show self-control and increased safety while carrying out motor tasks;

- knowledge of the type of effort specific to ju-jitsu can support coaches to guide athletes' training in an appropriate manner;

- moral-ethical and theoretical-methodical training can also positively influence the temperament of athletes, the competition results and the evolution of the individual in extra-sports life;

- the importance of selection in ju-jitsu and the guidance of athletes according to their skills and a targeted and systematic training can facilitate the achievement of great sports performance; so, it turns out that the importance of complying with the requirements of modern sports training in planning and conducting training in ju-jitsu is a basic element in improving performance.

- the evolution of the competitive system and the progress require from specialists a new approach to preparing, selecting the effective means that can ensure improved general motor body of knowledge, but especially the style specific one;

- the competition system in ju-jitsu has an upward trend: from the two classical probations, another two sections of the competition have been developed, namely duo-show and non-waza, which, although appear similar to the current ones, duo-demonstration and fighting, they require new approaches and guidelines in preparing athletes, that the specialists in the field should take into account.

In our opinion, an important scientific problem in our field is the introduction and development of non-specific methods of training in aspirants and juniors in the

ju-jitsu sports training, by observing the sports training components and related to the requirements of ju-jitsu modern competitions.

General Aspects of the Applicative Intervention

Depending on the annual planning of sports training, the division of training factors in the stages of preparation and especially the particularities and needs of athletes, we used the methods exemplified in the two systems. The intervention had three major directions that aimed at: planning the sports training depending on the requirements of presented major competitions; identifying and implementing the most effective methods of developing of the psychological component; applying some of specific and non-specific methods and techniques in order to improve the psycho-physical-technical components of sports training in the two competition systems.

The program was developed in accordance with age and training peculiarities of the subjects in the experimental group under analysis. It was structured over the entire competitive period and included the methods exemplified under Part I of the paper, and customized and adapted to the needs of each team / subject, and the intervention was divided over the three periods of competition. The distribution of programs was carried out as follows: Monday and Friday - program no. 1, Tuesday and Thursday - program no. 2, and Wednesday and Saturday - program no. 3. All these programs have supplemented or replaced, depending on the competitive period, the usual training, and the duration of the programs ranged between 35 and 45 minutes.

In support of the idea of active involvement in the process of improving the results in competitions, among other activities, **we have published several articles:**

- Galan, D. 2012, Capacitățile coordinative în ju-jitsu, Lucrare de disertație [Coordinative Capabilities in Ju-Jitsu, Dissertation Thesis], UNEFS 2012;
- Galan, D. 2014, Studiu comparativ privind agresivitatea și temperamentul sportivilor din sistemul fighting și sistemul duo demonstrativ al practicanților de ju jitsu [Comparative Study on Aggressiveness and Temperament of Athletes in the Fighting System and Duo-Demonstration System of Ju-Jitsu Practitioners]; National Conference of Martial Arts, Fifth Edition, Cluj-Napoca;
- Galan P. D., Galan D. D., Ju-Jitsu as a Method of Psycho-Physical Training in the Contemporay Age; Arena Journal of Physical Activities No. 3/2014 ISSN 2285-830X;
- Galan D., 2014, Ju-jitsu in Psycho-Physical Training of Individuals, The 4th International Congress of Physical Education, Sport and Kinetotherapy, Bucharest, 2014;
- Galan D., Rață G., 2016, Types of Learning and Their Applications in Ju-Jitsu, Discobolul Journal (under release);

- Galan D., Rață G., 2016, Study on the Frequency of Fighting System Techniques in Ju-Jitsu, Discobolul Journal (under release).
- Galan D., Rață G., Galan P. D. 2016 Study on Improving the Technical Level of Athletes Practicing Duo-Demonstration System in Ju-Jitsu- Aspirant Level 12-15 Years, Edu –Word 2016.