

REVIEW

**of dissertation for acquisition
of the educational and scientific degree
"Doctor"
in the field of higher education
1 Pedagogical sciences, professional direction
1.3 Preparation of training for a doctoral program
"Physical education in the educational system"
at "Vasil Levski" National Sports Academy**

**Theme: „STUDY ON THE PHYSICAL CAPABILITY AMONG STUDENTS T IN THE
HIGH SCHOOL STAGE OF THE SECONDARY EDUCATION“**

Author: Kalayan Kamenov Chernev

Supervisor: Vladimir Tenev Chernev, PhD

Reviewer: Prof. Elena Ilieva Nikolova, PhD

1. General presentation of the procedure and the PhD student

The procedure is done based on the Law for the Development of the Academic staff of the Republic of Bulgaria and its Regulation for Application in connection with the Ordinance for acquiring "PhD" educational and scientific degree at "Vasil Levski" National Academy of Sport by the rector's orders, Prof. Nikolay Izov, doctor of deduction with right of defense, for internal discussion of the study with one-time reinforced scientific collegium and for scientific jury approval of the conducted public defence (orders: 3II-1437/28.10.2020, 3II-551/18.05.2022, 3II-701/22.06.2022).

From 02.10.2017 the applicant was enrolled as a full-time doctoral student in the doctoral program "Physical education in the educational system" and on 28.10.2020 completes his studies as a doctoral student.

Meanwhile, Kaloyan Chernev works as Administrative Secretary with the Bulgarian Field Hockey Federation (August 04, 2014 till March 31, 2015). From November 03, 2014 till June 30, 2016, with short interruption, he is a part-time lecturer at the “Vasil Levski” National Academy of Sport teaching students of regular form of education in the specialty “Field Hockey”

Since September 09, 2015 till now he is teacher in physical education and sports at the 157 Foreign language school „Sesar Vallejo”, teaching students from the secondary stage of education and performing practical education of the students from the National Sports Academy. Since September 09, 2020 he also is a conditioning coach of BK “Levski”, Sofia.

Kaloyan Chernev's professional and research interests are related to teaching and coaching, respectively as a physical education and sports teacher, a field hockey teacher and a football conditioning coach.

The good educational specialized training of the doctoral student in two of the components of physical culture - physical education and sports in subordination to education and science are a prerequisite for the implementation of scientific research in this field, where it has been realized so far.

2. Topicality of the subject

The dissertation is dedicated to a problem which has been developed repeatedly within the Bulgarian theory and praxis and still remains a permanently current issue, namely the physical capability of persons of school age.

The research efforts of the Ph.D applicant are oriented aimed at level and dynamics of motor qualities and scientifically proven results in a relatively retrospective manner with performance of data from three large-scale studies conducted respectively in years 1965, 1970 and 1982 among boys- and girls-students at the age of 14 to 18 years.

The topicality is determined by the necessity of making sense of the scientific information for the state of physical development and motor skills based on established changes over time and to rethink the approaches and methods of impacting on students' motor abilities in the context of physical education and sports education.

3. Knowing the Problem

The dissertation is the result of a thorough study of the researched problem and a serious analysis of its various theoretical and practical dimensions. The author

shows a culture of research and a skill for analysis, resulting in a relatively complete study.

The main and necessary theoretical sources on the subject have been studied.

The literature used includes 185 literary and documentary sources, of which 95 in Cyrillic and 90 in Latin and Internet sources.

The exposition revealed the scientific and theoretical foundations of physical capacity, such as condition, structure and possibilities for controlling and evaluating the results in an age aspect, differentiated by gender. The features of the growth and development of the high school students in relation to their physical capacity are brought out. Special attention is paid to the morphological, functional and psychological characteristics of students aged 14 to 18 years, as well as to the clarification of the essence of the age-related development of motor abilities.

As a result of the in-depth literature research, the doctoral student came to important regularities, established by various authors, about the state of motor qualities at the age under study.

The unceasing interest in expanding and enriching knowledge about the various dimensions of the problem of physical capacity is outlined.

The knowledge accumulated over time from the conceptual and terminological provision through the subjective-objective knowledge about the person in age and his manifestations of mobility, the possible tests with proven reliability, validity and reproducibility and their reduction to the assessment are contained in the statement, which comprehensively outlines the statement of the problem. This shows in an indisputable way the good knowledge of the problem by the doctoral student Kaloyan Chernev, at the same time it justifies the smoothing of the working hypothesis of the study.

The derived working hypothesis includes for research and discussion key issues related to the effectiveness of teaching physical education and sport in school. The questions raised are based on the assumption that there have been changes in the age dynamics of the physical development and motor qualities of students as a result of modern living conditions and, in particular, the adequacy of the effects in classroom work on physical education and sports. According to the author, there is no up-to-date scientifically based information. That is why Kaloyan Chernev correctly refers to:

- Selection of tests to assess the physical capacity of students from the high school stage of secondary education.
- Establishing the differences in the state of physical capacity according to data from four studies - three national and one own in the age range of 14-18-year-old boys and girls.

- Establishing age and gender characteristics in the manifestation of individual motor qualities of modern male and female students from VIII to XII grade with a view to differentiation in the selection of methods and means in the learning process

4. Characterization and evaluation of the dissertation work

The presented dissertation is 236 pages long. The presentation is structured in a logical sequence according to the requirements for the presentation of scientific research developments.

After an appropriate introduction, three chapters list the literature used and appendices, which include 8 tables of data from comparative analysis between the studied populations on the relevant tests.

The first chapter is entitled "State of the problem according to literary sources". The content is differentiated into three sub-chapters with a volume of 63 pages.

In 1.1 - "Historical substantive and structural aspects of physical capacity", the doctoral student, on the basis of a thorough retrospective analysis, studies in detail the literary sources that treat questions about the structure and essence of physical capacity as a state and dynamics that should be investigated.

Kaloyan Chernev comprehensively studies the methods for measuring and evaluating physical performance, tying this knowledge to the evaluation of the discipline of physical education and sports at school and reveals the peculiarities of the growth, development and ontogenesis of the motor qualities of high school students in relation to their physical legal capacity

The doctoral student finds that the physical performance of students needs scientific research.

In the following chapters, Kaloyan Chernev confidently and reasonably expresses his opinion, which is a good indicator of the scope of scientific interests and knowledge of the researched problem.

Characterizing the presented statement of the problem in the first chapter, it should be noted:

- consistency, thoroughness and objective analysis of the literary sources are observed;

- good knowledge of the problem and scientifically correctly selected directions of the research process;
- the scientific position of Kaloyan Chernev, outlining the need for such research, is defended with sufficient arguments.

In the **second chapter**, the purpose, tasks, organization and methods of the research are presented.

The goal and tasks are set clearly and precisely.

The object and subject of the research are defined correctly.

The organization of the study is in four stages, in the conditions of four academic years.

Two pedagogical experiments of a conclusive nature are planned: preliminary and main.

The first pedagogic experiment includes pedagogic observation, pre-testing and assessment of the physical capacity of students, who subsequently participate in the main experiment.

The doctoral student argued the need for the preliminary study in order to specify the purpose, tasks and organization of the main experiment.

The rich toolkit used is presented and described in a logical sequence.

The selection of tests to obtain information about physical development and physical capacity is well-reasoned and in accordance with the scientific research in the study.

Two tests of physical development, one derived index for the body mass status (BMI) of students and 16 sports-pedagogical tests were used.

The selected complex research methodology, the successfully selected mathematical and statistical tools for processing and quantitative analysis of the experimentally obtained data, as well as the overall logic and sequence of the experimental work carried out, allow the doctoral student to receive answers to the questions and tasks set by him in the dissertation work.

The third chapter "Analysis of the results" is in a volume of 118 pages. A thorough and precise analysis of the rich experimental material has been carried out.

The work is well illustrated, which helps to easily understand the scientific development.

A huge amount of work has been done, the results of which can be used to update some approaches, select methods, means and specify methods for developing motor skills, as an essential educational-motor task in the training of the academic discipline.

At the same time, the results can serve for future research in this area.

The average level and variability of basic indicators of physical development, including and on the medico-biological indicator of healthy weight, as well as on the results of the other tests, the physical performance of the students of the 5 age groups differentiated by gender (79 boys and 135 girls).

The data from the comparative analysis between individual ages and gender were analyzed and interpreted.

Of interest are the changes that have occurred in the manifestations of some angles of the physical capacity of students from Sofia, established in different time periods of relative duration, located in a time span of more than half a century.

Correlation analysis of data on physical development and motor skills was also carried out.

The statistically reliable relationships between the studied indicators are derived. The results are visualized by 10 correlational structural models, 5 each for boys and girls respectively.

6 conclusions were made with additional explanations for two of them and 5 recommendations.

The conclusions and recommendations derive from the systematized and thoroughly analyzed results obtained from the conducted scientific research.

5. Contributions of the dissertation to science and practice

The problem of motor abilities in the context of physical education is always relevant for science and practice.

This applies with particular force to the younger generation, because motor skills are an essential prerequisite for the development, health, preparation and realization of a person.

- Emphasized, the positive assessment regarding scientific and cognitive achievements in the dissertation work is complemented by the following contributions:
- Up-to-date information was established from a pedagogical experiment establishing the state of physical capacity by examining the signs of physical development and the level of motor qualities of independent samples of persons of both sexes aged 14 to 18 years. We define this contribution as a contribution of a scientific applied nature.
- Reliable information is presented on established differences in physical development and the level of individual motor qualities of modern children and their peers who lived in the conditions of the last century in 1965, 1970 and 1982. We define this contribution as a contribution of a scientific and practical-applied nature.
- New reserves were revealed for improving the training methodology, as well as the activities for controlling and assessing the state of physical capacity. Non-traditional tests have been approved, with which the control and evaluation system can be enriched, including for ongoing verification and evaluation. This contribution has a practical-applied character.

The PhD student has four publications. In two of the articles he is the second author and in two - independent.

The abstract for the dissertation correctly reflects the main points and results of the research. In terms of volume and structure, it is made according to the requirements. I accept the doctoral student's self-assessment of the dissertation development expressed through contributions reflected in the abstract.

Some omissions and inaccuracies have been made in the dissertation:

On page 2 of the table of contents, there is an admitted inaccuracy in the numbering of the chapters.

In chapter II.5.5 on page 86, where the applied mathematical-statistical methods are described, a percentile analysis is mentioned and on page 87 a factor analysis is described, but both methods were not applied in the data processing.

The same inaccuracy was admitted in the statement of the author's abstract on page 13, where it is indicated that a percentile analysis was applied.

An error was also made when specifying the formula for calculating body mass (p. 75).

The structure of the tables suggests first writing the number and then the name, not the other way around.

We cannot agree with the statement that "physical education and sports in secondary schools is a means of management" of the process of improving human abilities.

We would advise the PhD student in future research not to abbreviate clarifying features of the tests, for example "Throwing a small ball" instead of "Throwing a small solid ball of marked weight", as well as striving for purity of scientific language and precise scientific stylistics.

My question to the PhD student is the following: please outline the unity and bring out the differences between the concepts of "physical capacity" and "physical condition".

CONCLUSION

The dissertation contains scientific, scientific and practical-applied results that represent contributions to science and meets the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria, the Regulations for the Implementation of ZRASR and the relevant regulations of the NSA "Vasil Levski". The developed dissertation work shows that the doctoral student Kaloyan Kamenov Chernev has in-depth theoretical knowledge in the chosen scientific specialty and the relevant skills and competencies for independent conduct of scientific research.

Therefore, with conviction I give my positive vote for the acquisition of the educational and scientific degree "doctor" by Kaloyan Kamenov Chernev, in the field of higher education 1. Pedagogical sciences and professional direction 1.3. pedagogy of physical education training.

August 08, 2022

Reviewer:
(Prof. Elena Ilieva Nikolova, PhD)