PROFESSIONAL COMPETENCY OF PHYSICAL EDUCATION TEACHERS IN PHYSIOLOGY OF PHYSICAL EDUCATION

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Abstract: The aim of the research is to reveal the peculiarities of the professional readiness of physical education teachers in the field of physiology of physical education on the basis of tasks in the test form. Research methodology and organization. In the course of the research, a methodological toolkit was developed for studying the competencies of physical education teachers of primary and senior schools in the field of physiology of physical education. The sample size was 727 respondents. The controlled parameters of the stratified sample are age, length of service, teaching grade.

Research results and conclusions. A qualitative analysis of the data obtained showed that the specialists in the field of physical culture participating in the study did not have any difficulties with the tasks associated with the characteristics of changes in the functional state (FS) in the working period, the physiological foundations of the development of motor abilities, and some age-related physiological characteristics of children. A good level of knowledge was revealed in relation to issues related to the general physiological classification of physical exercises by the volume of active muscle mass, the physiological substantiation of the principles of teaching the technique of physical exercises, the assessment of the influence of physical activity on FS and human health. The greatest difficulties were caused by questions concerning the age-related physiological characteristics of children in connection with physical exercises, physiological classification and characteristics of dynamic cyclic work of different relative power, characteristics of
changes in physical condition during the recovery period, physiological foundations of fitness. The results obtained indicate the need for further improvement of professional training of specialists in the direction of "Physical culture" in the field of physiology of physical education.

**Key words:** physiology of physical education, tasks in test form, physical education teachers, professional readiness.

**Introduction.** The requirements of the state educational standard of higher professional education to the level of preparedness of persons who have completed their education in the direction of "Physical culture" indicate that in the field of physiology, the mandatory minimum of the content of the educational program should include a wide range of issues related to the physiology of physical education. In the curriculum of higher educational institutions, the physiology of physical education is usually presented as the second part of the course "Human Physiology". It serves as a natural-scientific basis for the theory and methodology of physical culture and private sports and pedagogical disciplines [3, 13, 15, etc.]. There are several analogues of this training course, such as "Physiology of Sport" [6], "Sports Physiology" [4,5], "Physiological Foundations of Physical Education and Sport" [7], "Physiology of Sport and Exercise" [13].

In order to effectively solve the problems of physical education at a high professional level, a modern physical culture specialist must master a wide range of competencies and a large volume knowledge in the field of physiology based on the latest data science. Much attention is currently being paid to this problem not only in our country, but also abroad [2, 8, 9, 14].

The aim of the research is to reveal the peculiarities of the professional readiness of physical education teachers in the field of physiology of physical education on the basis of tasks in the test form.

**Research methodology and organization.** In the course of the research, a methodological toolkit was developed for studying the competencies of physical education teachers of primary and senior schools in the field of physiology of physical education. The general population for this study was the above-mentioned
groups of pedagogical workers aged 18 years and older. The sample size was 727 respondents. The controlled parameters of the stratified sample are age, length of service, teaching grade.

To implement the research tasks in accordance with the requirements of the theory and methodology of pedagogical measurements [1,2], two versions of “controlling” tasks were developed in a test form on key problems of applied physiology, covering the tasks of physical education of children of different ages. The first option included pedagogical tasks with the choice of several correct answers, the second option - tasks with the choice of one correct answer out of three alternatives. The logical information content of the tasks was determined by the criteria of certainty, correctness, consistency and validity [1]. The content and composition of the tasks were assessed by experienced expert teachers. Assignments were selected that did not contain comments on quality. At the beginning there were the simplest tasks, in the middle - the most difficult ones, by the end of the questionnaire the complexity of the tasks gradually decreased. Pilot study showed that tasks of the second type turned out to be more accessible for surveyed sample of teachers. Tasks included "questions" from the most important sections of the course "Physiology of Physical Education". They have been combined into four main blocks.

**Research results and discussion.** Analysis of the answers of physical education teachers to the proposed set of tasks in the test form revealed significant differences in their awareness of the key issues of physiology of physical education of children.

Assessment of the nature of the distribution of the number of correctly completed tasks revealed a slight negative asymmetry. In general, the law of statistical distribution of correctly performed tasks was close to the Gauss-Laplace distribution. Statistical processing of the research results showed that the “average respondent” answered correctly to 10–11 (M = 11.6; m = 0.12; σ = 2.49) statements contained in 15 tasks in the test form. An analysis of the relationship between the number of correct answers to tasks in the test form, on the one hand, and the length of service, age and education level at which the respondents' professional activities
are carried out, on the other, did not reveal statistically significant rank correlation coefficients. A strong degree of statistical relationship \((r = 0.78; p < 0.001)\) was found only between the experience and age of the tested. Also statistically significant differences in the number of correct answers to tasks between respondents differentiated into groups according to the parameters of experience, age and characteristics of their professional activities.

In the course of further work it was found that the distribution of correct and incorrect answers to tasks from different sections of the course "Physiology of Exercise" is significantly different. As can be seen from the data presented, the respondents did not have any difficulties with the questions related to the characteristics of changes in FS in the working period, the physiological foundations of the development of motor abilities (qualities). A good level of knowledge was revealed in relation to the issues related to the most general physiological classification of physical exercises by the volume of active muscle mass, the physiological substantiation of the principles of teaching the technique of physical exercises, the assessment of the effect of physical activity on the FS and human health. The greatest difficulties were caused by tasks related to the age-related physiological characteristics of children in connection with physical exercises, physiological classification and characteristics of dynamic cyclic work of different relative power, characteristics of changes in FS during the recovery period, and physiological foundations of fitness. The analysis of the ratio of correct and incorrect answers to the tasks in the test form revealed among the respondents a poor knowledge of such special terms related to the content of the above thematic sections of the physiology of physical education, such as "zones of relative power", "supercompensation", "sensitive periods of development of motor abilities ", "initial learning "as a stage of teaching motor actions," indicators of fitness under standard loads "," hypokinesia "," hypodynamia ", etc. As you know, work on the conceptual and terminological apparatus in the field of physiology of physical education the volume of special knowledge from specialists in physical culture. In this regard, it becomes necessary to expand the range of issues under consideration by increasing
the volume of academic hours allocated for the study of the course "Physiology of physical education". The creation and placement at the end of each section of the textbook on the physiology of physical exercises of a short dictionary of physiological terms reflecting the content and sequence of passing the educational material can also contribute to improving the assimilation of the curriculum in this academic discipline. In general, the information received indicates gaps in the formation of the corresponding conceptual apparatus.

**Conclusion.** The results obtained indicate the need to improve the professional training of specialists in the field of "Physical culture" in the field of physiology. To solve this problem, in our opinion, it is advisable to expand the range of issues under consideration on the physiology of physical education. At the same time, special attention in training programs should be paid to the characteristics of cyclic movements in terms of relative power, the patterns of restoration of functions after termination of work and the characteristics of the phases of the restitution process, the characteristics of fitness indicators at rest, with standard and maximum loads, physiological characteristics of children's muscular activity, age-related development of motor abilities, analysis of the influence of physical exercises on the physical condition of children at different periods of age development.

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