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KNOWLEDGE IN THE STRUCTURE OF CURRICULAR MODULES IN THE DISCIPLINE UNIVERSITY PHYSICAL EDUCATION: FORMATIVE FUNCTIONS

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It is well known the role of knowledge for learning motor actions, but also the application of knowledge gained in the independent practice of sports in everyday life. Knowledge, in fact, substantiates practical contents in physical education and sports activity. In this context, it is obvious that the small number of hours allocated to the subject of university physical education during a semester, the voluminous and complex contents cannot fully ensure the formation of knowledge specific to the sport test studied (especially when this sport was not studied in school). Thus, teachers are forced to resort to some methods less specific to the subject, and especially ICT tools. Therefore, the purpose of this study is to streamline the educational process in the discipline of university physical education by intensifying the formation of specific knowledge within the modules / sports tests by applying ICT tools. The pedagogical model developed by us for the formation of knowledge in university physical education lessons was applied to first-year students, who opted to study the badminton module, and the results are reflected in this work.

Keywords: *physical education, module, specific knowledge, students.*

CUNOȘTINȚE ÎN STRUCTURA MODULELOR CURRICULARE LA DISCIPLINA EDUCAȚIE FIZICĂ UNIVERSITARĂ: FUNCȚII FORMATIVE

Este bine cunoscut rolul cunoștințelor pentru învățarea unor acțiuni motrice, dar și aplicarea cunoștințelor acumulate în practicarea independentă a unor sporturi în cotidian. Cunoștințele, de fapt, fundamentează conținuturile practice în activitatea de educație fizică și sport. În acest context, este evident că numărul mic de ore alocat disciplinei educație fizică universitară pe parcursul unui semestru, conținuturile voluminoase și complexe nu pot asigura pe deplin formarea cunoștințelor specifice probei de sport studiate (în special când acest sport nu a fost studiat în școală). Astfel, cadrele didactice sunt impuse să apeleze la unele metode mai puțin specifice disciplinei și în special la instrumentele TIC. Deci, scopul acestui studiu constă în eficientizarea procesului educațional la disciplina educație fizică universitară prin intensificarea formării cunoștințelor specifice din cadrul modulelor/ probe de sport prin aplicarea instrumentelor TIC. Modelul pedagogic elaborat de noi pentru formarea cunoștințelor în cadrul lecțiilor de educație fizică universitară a fost aplicat studenților anului I, care au optat pentru studierea modulului badminton, iar rezultatele sunt reflectate în această lucrare.

Cuvinte-cheie: *educație fizică, modul, cunoștințe specifice, studenți.*

Introduction

The study organized within university physical education, but also the analysis of approaches, concepts and methodologies, created the basis for the reconceptualization of the discipline through modularization, in which a module provides for the study of a sports test during a semester [1, 2, 3]. The teaching-learning of a module or a sports test, according to the physical education curriculum, is oriented towards the formation of competences, and the content units (knowledge and motor skills) are structured so as to fully ensure the achievement of educational goals at the end of the semester [3, 4].

Starting from the notion of competence, ,,an integrated system of knowledge, skills, attitudes and values acquired, formed and developed through learning, whose mobilization allows the identification and solu-

tion of different problems in various contexts, life situations” [5, p. 68], it is necessary to highlight the role of the compartment (content unit) of knowledge in the modules designed in the curriculum for the discipline of university physical education and how these contents provide training/development of general and specific skills in students involved in the educational process.

From the analysis of specialized literature, we highlight some concepts of authors who argue the functions and value of knowledge in the educational process in the discipline of physical education.

The authors Sava Panfil and Ilescu Silvia consider that within the discipline of physical education, in addition to specific practical activities, knowledge training activities are necessary, stating that „the knowledge acquired by the student as a result of teaching certain concrete theoretical subjects contributes to the formation of visions, ideas, concepts, beliefs and motivation to actively and systematically practice physical exercises for various purposes” [6, page 12]. In the same vein, the same authors mention that knowledge is the information presented by the teacher during practical activities that guide the subject to correctly understand the structure of movements to fulfill the technically correct element, procedure, exercise.

In Oprescu Daniel’s opinion [6, pg. 308] „specialized theoretical knowledge has a primary role in awareness of practicing physical exercises”, and he mentions that „knowledge involves reflecting in the subjects’ consciousness the phenomena proper to physical education and sports activities, reflection in the form of perceptions, representations, actions or principles”.

Generalizing these statements, we summarize that the dimension of knowledge (general and specific) transcribed in the curricular modules of the university physical education discipline reflects and substantiates the practical contents, and through the acquisition by the student of the specific terminology from physical education or sports will positively influence the learning process, especially the movements specific to sports in practical lessons. At the same time, the knowledge gained by students will streamline communication between participants in the educational process, with direct impact on individual daily activities, where the student is willing to practice certain sports.

In previously published papers [2, 4, 8] we mentioned that by the number of hours allocated to education for one semester (15 hours transcribed in the curricula) it is very difficult to form elementary skills of independent practice of a sport, in which the practice and formation of an automated technique of movement is left to the student through individual activities, and specific knowledge is superficially internalized, in some cases it is not even addressed, these realities cannot fully ensure the achievement of educational goals.

Although in the specialized literature several authors refer to the application of verbal and intuitive methods (explanation, demonstration, etc.) for transmitting knowledge while performing exercises or technical-tactical actions, we find that they are insufficient. This is argued by the fact that in motor activities, the effort made during practical lessons causes physical and mental fatigue, which reduces the student’s ability to concentrate, so he is not able to receive, analyze and assimilate sufficiently the information transmitted by the teacher.

We emphasize that curricular contents are organized in a complex learning program (designed in the curriculum of the university physical education discipline) that fully corresponds to the 4 fundamental criteria of modular instruction theory [3, p. 477], and the teacher is given the freedom to diversify learning situations for competence formation.

From the above, it is necessary to characterize the structure of a module of the physical education curriculum of Moldova State University and especially of the knowledge component.

The knowledge component is divided into two parts, such as general knowledge and specific knowledge [2, 4]. The *general knowledge* in the curricular module includes those subjects that ensure the continuous course of the physical education discipline from the lower stages of education developing notions, definitions, peculiarities, legalities (e.g. hardening and physical development of the human body, self-assessment and self-control, etc.) and *specific knowledge*, with themes from the history of the sports test, regulation, technique and tactics specific to the sports test. They are meant to form in-depth perceptions, and, unlike the approach of these topics in school physical education, in higher education institutions they are oriented towards motivating and training the habit of independent practice of this sport, self-training, but also the organization of specific activities in daily life. This volume of information in a small number

of hours cannot be assimilated, therefore, in order to streamline the teaching-learning process of module-specific knowledge, it is necessary to use ICT tools.

The purpose of this study is to streamline the educational process in the discipline of university physical education by intensifying the formation of specific knowledge within the modules / sports tests by applying ICT tools.

In order to achieve the goal, the following objectives are proposed: analysis of bibliographic sources on methodological approaches to form knowledge in physical education lessons; elaboration of the methodology for forming knowledge specific to curricular modules of the university physical education discipline by applying ICT tools; application of the methodology for forming knowledge specific to modules in the educational process to the discipline of physical education with first-year students.

Concept and methodology

The arguments mentioned above, as well as the previous teaching experience, were the basis for starting a formative experiment, which was organized during one semester with the first year students (116 students) of the Faculty of Letters of Moldova State University. As a tool of ICT for the formation of specific knowledge of the curricular module, the university educational platform „Moodle" was selected. The choice of the „Moodle" platform for teaching-evaluating specific knowledge in the discipline of physical education, besides being an educational tool institutionalized by Moldova State University, is argued by the following specific aspects:

- sufficient number of tools for operationalization, accessible to students;
- access to the platform in Romanian, Russian, English;
- adopted for all electronic devices;
- flexibility in the educational process;
- effective communication between participants, etc.

At the beginning of the experiment, the university physical education course was reconceptualized and placed on the „Moodle" platform with content divided into blocks, topics and activities. The blocks consist of the general one and subjects on modules (in our case on sports trials). In the general block are placed general resources (curricula, timetable, methodologies, etc.) and the forum, through which teachers and students can open topics for debate. In the construction of a subject for the study of a module/sports test, tools such as the file (in which the general course for the knowledge specific to the studied sport test is placed), the link (which directs the student to complementary resources, e.g. video material, etc.) and the test for assessing the knowledge specific to the module/sports test are applied.

The second stage, in addition to informing about how to obtain the grade admitted to the discipline, students were trained on the new way of forming knowledge specific to the sports module/test, giving it freedom and flexibility for individual study on the educational platform „Moodlle". At the same time, for an efficiency of the educational process, the student was proposed the following rules:

- will have access to module-specific materials throughout the semester;
- will be able to initiate group discussions in the forum but also individually with the teacher;
- carry out the specific knowledge test individually and remotely, but the time allocated for completion will be limited;
- the period for carrying out the test is the period of assessment test I;
- for validation of the test, it is necessary to accumulate 5 points;
- the points accumulated in the specific knowledge test will influence the grade at the end of the semester.

At the third stage, the methodology of knowledge formation was applied by applying the educational platform „Moodle" to first-year students, who, according to the curricular provisions, opted to study the badminton module in physical education classes.

Results and discussion

The students participating in the formative experiment accepted the new methodology of knowledge formation in the discipline of university physical education and demonstrated openness and curiosity for

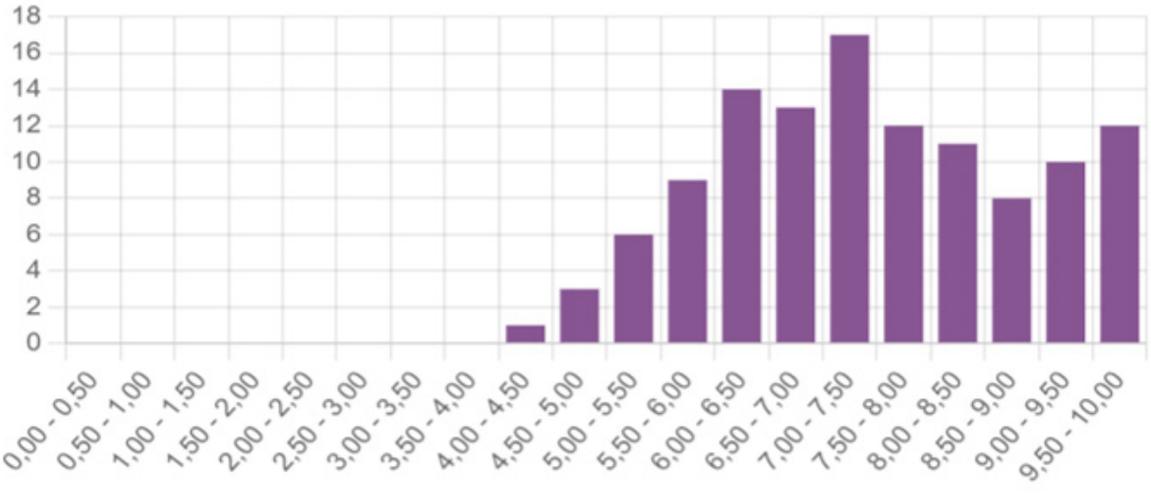
the activities started. This is because, in addition to the freedom to independently study the materials and to carry out the module-specific knowledge test during the time they consider it appropriate, they were also informed about how to obtain the grade admitted to the discipline at the beginning of the semester.

Our ultimate goal being the formation of module-specific skills, it is necessary to analyze more broadly the level of specific knowledge formed during the semester in the students participating in the experiment. As mentioned above, this methodology was applied to students who opted to study the badminton module and the results are reflected in the data centralizer offered by the educational platform „Moodle” (figure 1, 2 and 3).

From figure 1 we see that 22 students (18.9%) obtained values between 9 and 10 points and 19 students (14.5%) obtained values between 8 and 9 points. It attests that almost a third of the students participating in the experiment demonstrated cognitive skills at a very good level.

Almost half of the students who completed the questionnaire (48.8%) demonstrated knowledge at a good level, where 29 students (25%) accumulated values between 7 and 8 points and 27 students (23.2%) accumulated between 6 and 7 points. A much smaller number of 15 students (12.9%), after completing the knowledge test specific to the badminton module demonstrated a sufficient level, obtaining values between 5 and 6 points.

Fig. 1. Number of students in the point ranges obtained on knowledge testing Badminton module specific.



Unfortunately, 4 students (3.5%) did not check the correct options to accumulate 5 points, being evaluated with insufficient grade. It should be noted that students who did not take the test at a sufficient level were proposed ways for recovery.

In order to identify in which subjects from the specific knowledge compartment of the badminton module students encounter difficulties for assimilation, it was necessary to make an analysis of the items proposed in the evaluation test, presented in figure 2.

The construction of the classical test includes 8 items, of which (figure 2):

- 2 items on the history of badminton;
- 3 items from the rules of the game;
- 3 items from the technical content of the game (game-specific moves).

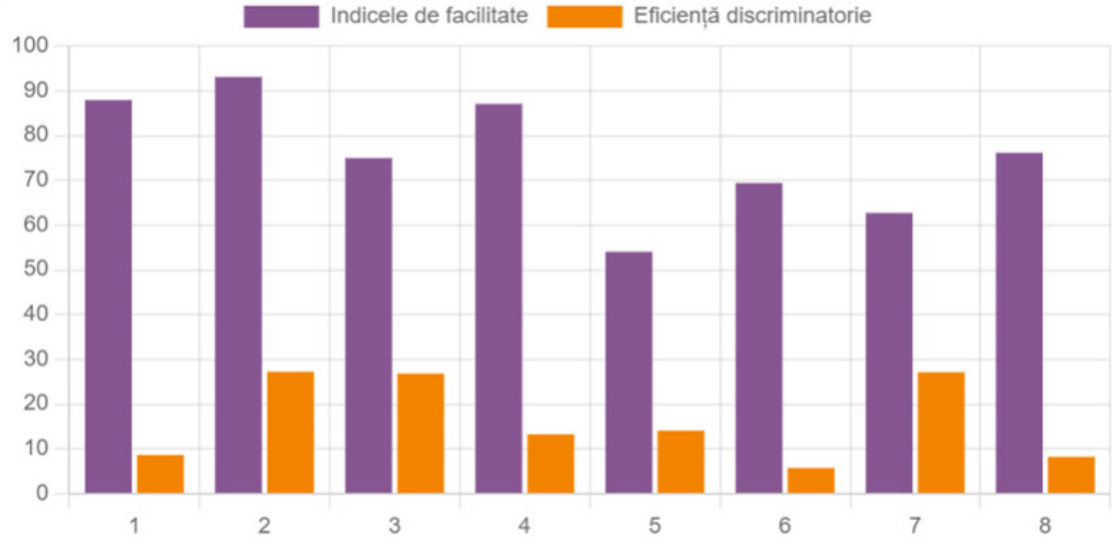
From figure 2 and 3 we see that the Facility Indicators to identify the correct answer by the student is, on average, over 75%, and the discriminatory efficiency index is below the level of 20%, which indicates that the test gives the student the opportunity to easily obtain the minimum required points.

The same indicators of figures 2 and 3, related to the analysis of the test, highlight the fact that, from the specific knowledge contents, respondents have difficulties in acquiring content related to the rules of the game (fouls in the game of badminton) and specific terminology (classification of shots in the game of badminton). These data, in order to achieve the educational goals by the student, provide the teacher with guidelines for reconfiguring the educational process in practical lessons, which shows the need to give more time to acquire the rules of the game and the specific terminology of the badminton technique.

Fig. 2. Analysis of the structure of the badminton module specific knowledge questionnaire

Q#	Denumirea întrebării	Încercări	Indicele de facilitate	Deviație standard	Scor ghicit aleatoriu	Pondere intenționată	Pondere efectivă	Indicele discriminării	Eficiență discriminatorie
1	Istoria jocului badminton	116	87,93%	32,72%	50,00%	10,00%	9,28%	5,17%	8,68%
2	Badmintonul în programul Jocurilor Olimpice	116	93,10%	25,45%	20,00%	10,00%	8,54%	12,85%	27,28%
3	Reguli de joc	116	75,00%	43,49%	20,00%	10,00%	14,12%	19,96%	26,86%
4	Durata partidei de badminton	116	87,07%	33,70%	25,00%	10,00%	10,05%	8,52%	13,29%
5	Faulturile în jocul de badminton	116	54,06%	30,83%		10,00%	10,07%	13,83%	14,12%
6	Tehnica jocului de badminton	116	69,40%	32,49%		10,00%	9,26%	5,39%	5,79%
7	Clasificarea loviturilor în jocul de badminton	116	62,74%	31,81%	33,33%	20,00%	19,86%	26,50%	27,16%
8	Deplasăriloe în jocul de banbinton	116	76,15%	34,56%		20,00%	18,82%	7,03%	8,26%

Fig. 3. Positions of questions in the structure of the test by knowledge specific to the badminton module.



Regarding the results of the assessment of knowledge specific to the badminton module, in general, out of the 116 students only 4 of them did not accumulate the minimum required of 5 points, which is 96.5% successful for the specific knowledge component. It is also worth mentioning that at the second evaluation, which reflects the formation of motor skills specific to the game of badminton, all 112 students who took the mode-specific knowledge test, demonstrated a very good level of mastery of technical-tactical actions in badminton as a result of which they obtained the grade „admitted" at the end of the semester.

In **conclusion**, we state that:

- the knowledge specific to sports modules/tests in the curriculum of the discipline Physical Education aims to streamline the educational process and the acquisition by students of notions, specific terms will directly influence the formation of skills/abilities to practice the studied sport;
- by intensifying the teaching-learning-assessment of module-specific knowledge in the university physical education lesson, by applying ICT tools, it will lead to the efficiency of the educational process (formation of specific competences), in the context of allocating a small volume of hours for the subject during a semester;

- ICT tools applied in the educational process of the physical education discipline offer the student full freedom to acquire the knowledge specific to the sports modules / tests practiced during the lessons;
- the results of the questionnaires for assessing the knowledge specific to the modules, following the analysis by the teacher, offer the possibility to build an efficient path of acquiring sports tests at the level of training of the group of students, or for each student.

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