

REACHING THE OBJECTIVES OF PHYSICAL EDUCATION IN FACULTIES OF NAVAL ARCHITECTURE AND OF FISHERY IN GALAȚI BY USING SWIMMING SPECIFIC MEANS

Ioan ONET, Gabriel GHEORGHIU

"Dunarea de Jos" University of Galati, Romania

Abstract

This research aims to change the content of the academic syllabus for physical education by introducing specific elements for sportive and applied swimming, considered more effective in achieving the educational goals of students from the Faculty of Naval Architecture and that of Fishery. Taking into account the characteristic features of the activity of specialists and of graduates from these faculties, we consider swimming practice as a requirement for effectively solving profession specific tasks.

Key words: objectives; physical education; efficiency; specific means.

INTRODUCTION

The present study is part of a more extensive research that ultimately wants to prove that the current syllabus for physical education can be improved by implementing swimming specific means, especially at the Faculties of Naval Architecture and of Fishery, where profession requirements recommend that field specialists know how to swim. It represents an older concern, for the which accomplishment of which we have considered several criteria, including:

- geo-strategic settlement of Galați;
- swimming facilities available in Galați;
- options of the students from both faculties (naval architecture and fishery);
- profiles of the two faculties.

Analyzing each criterion we can state the following:

Regarding the geo-strategic location of Galați, the city is situated near, or rather is surrounded by the waters of the Danube, the Prut and the Siret rivers, and the Brateș, Cătușa and Mălina lakes. Because of this, approximately 30-35 people drown every year for lack of swimming practice.

From the point of view of the facilities, an improvement could be noticed lately. Currently, the city of Galați has approximately six indoor pools of varying sizes that can absorb hundreds of children and adults every year, approximately 450-500 people, of which, at the end of the training stages, most are able to swim. Just a small part of them are selected to practice performance swimming, approximately 45-50 children.

The city also benefits from several swimming pools, of which about 4 or 5 are outdoor and open during the summer and benefit from the help of specialized staff that teaches a part of city residents to swim.

The lake and river beaches situated near Galați attracts part of the population, but because there is no specialized staff employed to teach swimming, children learn, often poor, specific technical

knowledge about basic swimming from their parents or other acquaintance.

We have obtained students options from both profile faculties as a result of a sociological survey in which a questionnaire with eleven questions needed to be filled in, all the questions being related to the requirement of introducing a structure of specific swimming exercises in the physical education syllabus.

The number of respondent students was 120, the conclusions drawn from the results interpretation were used in the process of research settling and conducting.

Students from both faculties (of Naval Architecture and Fishery) from "Dunarea de Jos" University of Galati are required that at the end of their studies will be able to swim, a requirement absolutely necessary in order to achieve specific performance objectives at their work place.

Research hypothesis: Will the introduction of specific elements for the sportive and applied swimming training program for students from the two faculties lead to the accomplishment of the physical education objectives scheduled in the syllabus?

RESEARCH PURPOSE

- Finding out students opinions from both faculties regarding the introduction in the training program of swimming specific elements;

- Finding out if the introduction of these elements will lead to the accomplishment of the physical education objectives, if the final results from control samples do not suffer major changes.

Based on the general objectives of physical education and sports in higher education, such as

- inclusion of all students in systematic and organized practicing of favorite physical exercises and sports;

- continuous improvement of health, physical and mental strength, as well as a harmonious body development;

- developing and strengthening of a practical and theoretical knowledge system (hygienic, physiological, methodological, technical, organizational) in accordance with the general tasks of higher education;

- cultivating the beliefs and habits for the independent practice of favorite exercises and sports for hygienic, relaxation purposes;

- providing compensation effects on intellectual activity, treatment of sedentary, stress and fatigue and taking into account the forms of physical education and sports activities among the students, such as physical education and sport practical lessons, organized with first and second year students, two hours weekly, conducted on professional groups, mixed or differentiated by gender;

- sports branches training classes, organized with students selected for representative teams;

- initiating circles in practicing sport branches – in cases of requests of students;

- independent practice of favorite physical exercises and sports;

- organized sports competitions (domestic and international competitions),

we tried to persuade and to attract a greater number of students in the practice of sportive and applied swimming, raising awareness of the benefits gained from these activities.

RESEARCH METHODS

In our research we used a comprehensive approach in order to examine various aspects of the socio-professional specific activity of the naval engineer, the character and content of physical education in the faculties of naval engineering and of fishery and improvement conditions of this activity taking into account the problem of accommodating the means and methodology with the professional physical training of future domain specialists.

The solving of these tasks was ensured by the complexity of the methods used:

- analysis and generalization of literature.
- study of the work documentation on professionally-applied physical education and university physical education.

- socio-pedagogical survey (questionnaire, interview, conversation).

- pedagogical observation method.

- expert note, rating.

- medico-biological tests.

- motive and psycho-motive tests.

RESEARCH MANAGEMENT

The research was conducted during the 2012-2013 academic year, with students from the Faculties of Naval Architecture and Fishery. The group consisted of second year students from both faculties. We choose groups containing roughly equal numbers of students. The Faculty of Naval Architecture groups included a number of 28 and

31 students, those from the Faculty of Fisheries Faculty, a number of 30 and 31 students. In these groups, the number of girls was very small, 2 to 3 girls in the group.

The groups from the Faculty of Naval Architecture were considered experimental groups and those from the Faculty of Fishery, the control group.

The research has been carried out in several stages:

1. In the first stage, at the beginning of the first semester, October 2012, we conducted the initial testing with both groups, experimental and control. Control tests were technical tests, scheduled in the physical education syllabus for higher education.

2. The second phase was accomplished by filling in a questionnaire that we devised, which contained eleven questions and which studied the students opinions from both faculties about the need to introduce sportive and applied swimming in the preparing process for the physical education discipline. Also, in this stage, the teaching staff from these faculties, the specialists, naval and fishery engineers were asked the express their opinion in this matter by answering some questions contained in a survey conducted by researchers. This step was covered in early November 2012.

3. Next, we diversified and implemented training programs. With the experimental group we started swimming specific activities in the indoor pool at "V. Alecsandri" National College in Galați. We implemented in the training process exercises specific to sportive and applied swimming, proposed to be introduced in the new syllabus and for the control group we used practical and methodical activities recommended by the physical education syllabus. The implementation of these programs was made during the last part of the first semester and the first two parts of the second semester.

4. In the last part of the second semester of 2013, we made the final testing of the two faculty groups. All students took the same control tests. The results were recorded, tabulated and statistically and mathematically processed.

RESEARCH RESULTS

The students involved in this research were between 19 and 31 years of age, and were divided almost identical in 4 groups. The average age of the experimental group is 23.4 years and that of the control group is 23.6 years.

After analyzing and interpreting the answers of both faculty students at some of the eleven questions we reached the following conclusions:

- 82% answered affirmatively the question regarding their opinion about swimming, if it has a beneficial influence on the development of the body;

- 75% answered affirmatively the question if they consider that the introduction of sportive and applied swimming in the training program, scheduled in the university physical education

syllabus would lead to the achievement of professional physical training objectives;

- most of the students (about 71%) answered affirmatively at the question if they like to swim in their spare time and if they prefer that physical education classes to take place in the swimming pool.

Following the initial testing of the four groups and after their statistical and mathematical interpretation, the results obtained to the control

tests are approximately equal, with very small differences, in somatic tests and both in motive and psycho-motive tests.

After recording the results of the final testing and after their statistic interpretation we observed significant increases at some tests, especially in those regarding physiological and motive developing, at psycho-motive tests in favor of the experimental group.

Table 1. Comparative data indicating the level of physiological development in the experimental and control group (initial and final stages)

Test	Gr.			t	P	t ₁	P ₁	t ₂	P ₂
Heart rate (beats per min.)	E	78±0,96	73.3±0.55	4.44	<0.001	0.73	>0.05	3.96	<0.001
	M	78.7±0.99	77.27±0.92	0.58	>0.05				
Ruffier test	E	11.07±0.81	9.83±0.68	1.15	>0.05	0.77	>0.05	0.089	>0.05
	M	10.13±0.91	9.93±0.89	0.15	>0.05				
	E	15.47±0.39	13.97±0.33	2.89	<0.01	0.32	>0.05	3.13	<0.01
Vegetative test (sec)	M	15.66±0.44	15.57±0.39	0.16	>0.05				
	E	7.23±0.38	9.4±0.46	3.58	<0.01	0.45	>0.05	3.73	<0.001
Thoracic elasticity (cm)	M	6.97±0.42	7.1±0.41	0.23	>0.05				
	E	4173.3±73.8	4713.3±78.4	4.14	<0.001	0.87	>0.05	4.6	<0.001
Vital capacity (cm ³)	M	4086.7±60.9	4140±96.8	0.41	>0.05				
	E	57.3±0.93	59.9±0.87	2.23	<0.05	0.28	>0.05	1.34	>0.05
	M	57.7±1.09	58.03±1.12	0.21	>0.05				
Apnea inhaling time (sec.)	E	18.3±0.58	20.4±0.55	2.60	<0.05	0.70	>0.05	1.66	>0.05
	M	18.63±0.62	19.1±0.56	0.55	>0.05				

Table 2. Comparative data of the increase in the physiological development values in the experimental and control groups (initial and final stages)

Test	Gr.			t	P	t ₁	P ₁	t ₂	P ₂
Speed running (sec.)	E	14.12±0.14	14.07±0.14	0.26	>0.05	0.1	>0.05	0.65	>0.05
	M	14.14±0.15	14.20±0.15	0.31	>0.05				
Coxofemoral mobility (cm)	E	54.93±0.45	52.31±0.45	4.09	<0.001	2.40	<0.05	0.87	>0.05
	M	53.27±0.53	51.75±0.46	2.15	<0.05				
Spinal mobility (cm)	E	8.3±0.41	11.7±0.32	4.4	<0.001	0.17	>0.05	5.45	<0.001
	M	8.4±0.41	9.3±0.32	1.76	>0.05				
Aerobic resistance (sec.)	E	262.4±2.73	253.7±2.69	2.26	<0.05	1.12	>0.05	3.03	<0.01
	M	266.6±2.51	265.5±2.82	0.30	>0.05				
Arm strength (nr. reruns)	E	9.93±0.47	11.56±0.34	2.84	<0.01	1.61	>0.05	3.81	<0.001
	M	8.93±0.42	9.5±0.43	0.96	>0.05				
Back strength (nr. reruns)	E	29.46±1.15	33.66±1.02	2.73	<0.05	1.02	>0.05	1.01	>0.05
	M	31.2±1.26	32.06±1.21	0.49	>0.05				
Abdominal strength (nr. reruns)	E	75.9±3.58	92.3±2.64	3.68	<0.001	0.66	>0.05	3.27	<0.01
	M	72.8±3.03	79.1±3.05	1.46	>0.05				
Inferior limbs extension (m)	E	2.13±0.02	2.21±0.02	2.10	<0.05	0.25	>0.05	2.0	>0.05
	M	2.14±0.037	2.13±0.036	0.29	>0.05				
Superior limbs extension (m)	E	43.65±1.12	48.41±1.04	3.11	<0.01	0.09	>0.05	2.50	<0.05
	M	43.8±1.24	44.32±1.26	0.29	>0.05				

CONCLUSIONS AND RECOMMENDATIONS

• The theoretical analysis and generalization of the professional physical training aspect in the educational process of the "Physical Education" discipline in higher education demonstrates that in this area we have outlined basic concepts that have the methodological potential for exploring the educational contents appropriate to physical culture subsystems with a specific purpose, to train highly qualified specialists.

• The examination of tradition and current practice of the instructive educational process for the "Physical Education" discipline in the Faculty of Naval Architecture and that of fishery reveals the lack of correlation between its content and the socio-professional profile of the specialist, which requires the development and implementation of appropriate specific means for motive culture and personality, needed by the future specialist to actively achieve the social and professional functions, by possessing a high level of work capacity and health.

• The analysis and generalization of pedagogical survey results, of the pedagogical observations and those of timings have contributed to the experimental syllabus elaboration for "Physical Education" for naval engineering and fishery faculties with professional applied orientation.

• The verification of the experimental physical education syllabus within the pedagogical experiment was oriented toward developing psycho-physical qualities, and professional-applied psycho-motive skills and conditioned the application of educational technologies for improving the educational process in the lessons system, during the two semesters of studies and proved to be effective, showing superior factual results for the experimental group compared to the control group at a significant level $P < 0.05$, 0.01 and 0.001 for:

1. motive indicators: speed running, coxo-femoral mobility, spine mobility, aerobic resistance, segmental strength (arms, back and abdomen), superior and inferior limbs extension;

2. physiological indicators: heart rate, Ruffier test, vegetative test, thoracic elasticity, vital capacity, inhaling and exhaling apnea time;

3. psycho-motive indicators: sensory-motive coordination, right and left Matorin test, general skill and combined reaction;

4. mental and intellectual development indicators: attention volume and allocation, operative visual memory, perseverance, emotional stability, intellectual and theoretical tests.

PRACTICAL AND METHODOLOGICAL RECOMMENDATIONS

1. Our research shows that optimizing professionally-applied physical training by means of sportive and applied swimming can effectively contribute to the formation of the psycho-socio-motive specialist profile.

2. Pedagogical experiment results confirm the important role of new syllabus designing in the educational process for the "Physical Education" discipline.

3. Sociological researches applied to the specific conditions of activity (productive activity) will determine specific features for physical education university content in terms of professional-applied physical training of domain specialists

4. The final result of the experimental study conducted by us, psycho-motive profile realization of the naval and fishery engineers, implemented in the profession-specific ergonomic conditions, enable a new interpretation of teaching physical education in naval engineering and fishery faculties that will be in accordance with immediate and future requirements of this profession.

REFERENCES

1. Badiu T. și colab.– (2002). *Metodica Educației Fizice a tinerei generații*, Editura Mongabiti, Galați.
2. Dragu M. (2010). *Inotul sportiv. Tehnica și metodica procedurilor de inot*. Ed. Zigotto.
3. Dragnea A. (2002). *Teoria Educației Fizice și a Sportului*, Editura București.
4. Ploesteanu C. (2009). *Teorie și Metodologie curriculară în educație fizică școlară și sportivă*. Ed. University Press, Galați.
5. Popescu M. și colab. (2004). *Studiu privind potențialul biometric al studenților din România în perioada ultimilor 35 de ani (1968-2003)*. București: Academia de Studii Economice.
6. Scarlat E. (1981). *Lecția de educație fizică - metode și mijloace*, Editura Sport - Turism, București.