

THE PROFESSIONAL SPECIFIC AND SPORTIVE TRAINING OF THE NAVAL STUDENTS - ELEMENTS OF OPERATIONAL RESEARCH

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Abstract: *The present paper shows in short, the results of a larger research we made in Romania with the naval students who followed an experimental methodological plan for their specific physical training, in order to increase the level of their efficiency and their performances according to the physical and psycho-motional requests aboard ships, during good weather as well as when bad, stormy weather over the seas. The results we obtained, presented here in their short form, because we do not have room enough, showed that the improving experimental intervention proved to be extremely positive, modifying all previous concepts expressed so far, in the methodology of the naval students physical and psycho-motional training.*

Keywords: *Specific physical training, specific training, applicative swimming, testing, professional-applicative performance,*

I. INTRODUCTION

During the professional training of the naval students, the *specific physical* and the *psycho-motional training* has a main role to play. In order to achieve from practical point of view this training, in order to face the specific needs and requests of the navigation activities we have to simultaneously realize a lot of tests. In the same time we also have to apply *true tests* involved in the field, as well as a thoroughly and most adequate mathematical-statistical processing of the data we obtained, just in order to be able to direct the multiple task preparation, needed in the field.

II. THE RESEARCH TASKS

The wide research we made on the naval students had a large number of tasks. First of all we studied the level and the directions of physical requirements aboard ships, to understand the way to act in order to help and improve the training of the naval students and their officers, of the civilian and military fleets, as well. We also strongly objectified the results obtained from the specific tests we used, processing in the statistical-mathematical way all those data gathered in every phase of this applied research.

III. THE RESEARCH METHODS

All the research methods were also multiple, including the special literature study, the laws and the rules concerning the life and the activities aboard ships. Eventually, we tried to build up and apply specific tests in the field, we introduced new ideas to improve the methodology of the specific training, in the processing of the data and the mathematical-statistical analysis. We established absolutely at random a witness-group and an experimental one, between the naval students. After the first test (T_1), we applied the new methodology, on the experimental group of specific training, and the requests aboard, previously studied.

Because we do not have room enough in this paper we'll expose only the second part of our operational wide research in the field, the comparative evolution of the data and the statistical processing.

IV. THE RESULTS OF THE RESEARCH

IV. a. The results and the dynamics of the investigated parameter evolution in the first test of the specific physical training of the naval students

At the first test (T_1) the groups of students showed an uniform value of the physical training level, or better said the same missing points in this respect, in both groups, as the expressed differences between them, concerning the statistic term „t”, were not significant. At the second test (T_2) included in the first experimental stage, after applying the experimental specific professional training program, we may note in this very phase, significant statistical differences to four from the six watched parameters.

IV. b. The comparative analysis of the groups results, characterizing The specific physical training of the naval students involved in the pedagogical experiment

(witness and experimental groups), in the second testing (T_2) of the experimental stage I:

- at the specific test of *rowing in the single boat along an established itinerary*, the experimental group, we used to apply our specific program, outrun the witness group. We used for the witness group the traditional training system. Therefore we improved the group time medium with 65.26 seconds, the value of $t = 6.39 > 4.14$, a *very significant difference*, from *statistical point of view* to $p < 0.001$ and $n-1$;
- at the *equipped swimming for 50 m in blouse and trousers* $t = 2.17 > 2.14$, a *significant difference from statistical point of view* to the threshold of statistic significance $p < 0.05$ and the liberty freedom degree of $n-1$;
- at the specific test of *pulling the rope during swimming* $t = 3.73 > 2.97$, the *significant statistical difference* to $p < 0.01$ and $n-1$;
- at the specific test of *quick run aboard ship on an established itinerary*, the experimental group records at its second test, a time shorter with five seconds than the witness group, $t = 2.62 > 2.14$, representing a statistically significant difference at the threshold of the *statistic significance* $p < 0.05$ and liberty degree $n-1$.

Continuing to apply to the experimental group the special program of the training, containing an adequate level of professional requirements at the naval students level, as well as the professional navigators level, we noticed an even bigger difference from positive point of view between the results obtained by the students of the experimental group, compared to the ones of the witness group. At the final test (T_1) of the groups of students, concerning the *specific physical training*, the experimental group recorded a spectacular difference, compared to the witness group at all tested parameters.

IV.c. The comparative analysis of the groups results, characterizing The specific physical training of the naval students involved in the pedagogical experiment (witness and experimental groups), in the final testing (T_1)

- the test of *heavyweight lifting by pulling the rope when standing (orthostatic position)* the value of the statistical significance of the difference between the medium values of the groups „t” = $3.24 > 2.97$ the difference is „*statistically significant*” at the significance threshold of $p = 0.01$ and the liberty degree $n-1$;
- at the test of *rowing a single person boat along an established itinerary*, the results recorded by the members of the experimental group were showing the most spectacular evolution, the statistical significance between the groups results, being of „t” = $8.6 > 4.14$, the difference meaning being „*statistically, very significant*” to „p” < 0.001 and $n-1$;
- at the test of *equipped swimming* in blouse and trousers for 50 m „t” = $2.52 > 2.15$, the difference between the group average times, being „*statistically, significant*” to „p” < 0.05 and $n-1$;

- at the *specific endurance test of pulling the rope when swimming* in order to maintain a heavyweight at a constant level on an addapted helcometer, the statistical difference between the results of the groups was „t” = 8.49 > 4.14, another „statistically, very significant” difference to „p” < 0.001 and n-1.

- at the *applied swimming* test, very specific to the Naval Forces students, the statistical significance of the difference

between the two groups was finally, „t” = 6.17 > 4.14, a „statistically, very significant” one to „p” 0.001 and n-1.

- at the *quick run aboard ship, combined with the jump in the water and the climbing back on the pilot ladder*, we got a difference, between the groups, of „t” = 4.66 > 4.14, „statistically, very significant” at „p” < 0.001 and n-1.

V. CONCLUSIONS

As we noticed before, in the experimental stage II, we concluded that the introduction of the specific physical and psycho-motional training adequate to the needs and requests aboard ships, we also influenced the level of the general physical training, in the final phase of this research, as the experimental group reached superior, better values, improved at seven from the nine investigated parameters. The differences between the groups was „statistically, very significant” according to Fischer’s Table, at a statistical significance threshold of „p” < 0.001 and n-1.

In the field of *specific physical training*, the evolution of the parameters recorded in the final phase, clearly

demonstrated the training program is justified, aboard ships. The statistic evaluations results emphasized that the experimental group marked „statistically, very significant” differences, at the most of the recorded investigated parameters at a significance threshold of „p” = 0.01 and n-1. We are expressing in objective figures, as you can see. Thus, we can do the mathematic models of the training levels we followed, as well as the processing of the statistical-mathematical manner of understanding the results. It means we reached at a high level the task we proposed, in this pedagogical experiment.

VI. FINAL CONCLUSIONS

1. After this study we decided the problem of the *specific physical and psycho-motional training* inside the naval education left no traces in the specific literature. Not enough, we may say. The authors getting next to the problems of the naval training refers much more to the psychological and pedagogical area of the education in the field. But they still recognize the important roleplay, the physical activity and the sports activities have in maintaining a balanced person in the middle of the naval activities, aboard ships.

2. When analyzing *the educational plans*, an the other *planning documents* in the Navy, we first of all noticed a *too short schedule* (short number of hours) concerning the physical training of **the naval students**, they having been

accorded the same number of physical training hours, as for the students in philosophy, literature or..., theology, not at all correct with their status, with their future activity, the professional needs of **the navigators**. We also have to notice, that until the research we made, the schedule involved mostly, *general physical training*. The mentioned psycho-motional training having in these circumstances a very reduced presence, compared to the necessary training time, requested by the navigation activities.

3. When *analyzing the results of the sociological investigation questionnaire*, we learnt the scientists are very aware about the need of allotting a larger number of these training hours in the naval education, in order to improve their specific qualities in physical training.

VII. METHODOICAL-PRACTICAL RECOMMENDATIONS

1. The results obtained optimizing the structure and the contents of the physical and psycho-motional training of the naval students demonstrated the true way we acted in the experiment, a valuable research and also, the need to generalize the new optimal system, to extend it and apply it to the whole naval personnel.

2. The structure of organizing the professional activities aboard ships has to compulsory include the training due to obtain the highest rate of results in the professional

activities in the open sea, as the sea is calm, as well as to perform **The ship’s roles** („man overboard”, „fire on board”, „waterhole on board, flooding”, „abandon ship”, „save and secure the others in the wreckage case”, etc.) Therefore the practical training of the navigators is needed **(to train on and on, all the time)**, in order to form and maintain the physical capabilities and a real capacity to perform the specific psycho-motional acts, needed in order to navigate, no matter the conditions, in any situation.

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