Efficiency of using interactive means of theoretical training of swimmers 8-10 years old

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Abstract

Purpose: substantiating and developing the structure and content of theoretical training of swimmers at the stage of initial training and determining the effectiveness of traditional and interactive means of theoretical training on the level of theoretical training of athletes.

Material and methods. A sociological survey by means of a questionnaire was conducted among qualified swimmers and trainers-teachers in order to establish the actual problems of the theoretical training of swimmers. The total number of interviewed qualified swimmers was 32 people, the average age of the interviewed athletes was 17.40±0.48 years, 68% were male, 32% were female. The experience of playing sports is 10.62±0.47 years. The total number of interviewed coaches was 17 people. Among the interviewees were 3 coaches of the highest category, 1 of them is an honored coach of Ukraine, 6 people are coaches of the first category, 8 people are coaches of the second category; the average age of the interviewees was 43.49 ± 0.44, 65% were male, 35% were female. Young swimmers aged 8–10, who were practicing at the stage of initial training, took part in the pedagogical experiment. The total number of athletes was 19 people. Two experimental groups were formed, in the preparation of which both generally accepted means and methods of theoretical training were used, as well as the author’s interactive means using the game method. Mathematical and statistical processing of the research results was carried out using such criteria as: Shapiro-Wilkie (to check the normality of the distribution of the studied indicators of swimmers), Student’s t-test (for independent and dependent samples in the case of normal data distribution), Mann-Whitney U-test and Wilcoxon (in the absence of a normal distribution of data); correlation analysis between the competitive result and the level of theoretical preparedness of swimmers at the stage of initial training.

Results. Educational and training classes according to the developed program with the use of the author’s interactive means of theoretical training contributed to a reliable (p<0.001) increase in the general level of theoretical training of swimmers at the stage of initial training by 161.00%. At the same time, educational and training classes with the use of theoretical training tools provided by the state curriculum turned out to be less effective and contributed to an increase in the overall level of theoretical preparedness of young swimmers by only 39.87%.

Conclusions. Theoretical training is an integral part of the system of training athletes. The use of interactive means of theoretical training with the use of the game method (computer games) in the process of theoretical training of young swimmers significantly increases its effectiveness, in contrast to classes in which only traditional means and methods were used (study of special literature, story, conversation, demonstration of stands, documentaries) theoretical training. At the same time, it was established that there are no gender differences between the indicators of theoretical readiness of boys and girls swimmers 8-10 years old. In addition, a high correlation was found between the general level of theoretical preparedness of swimmers of the main group and the time to cover the competitive distance of 50 m, which indicates that with an increase in the level of theoretical preparation, the time to cover the competitive distance decreases.

Keywords: swimming, theoretical training, structure and content, interactive tools, games
Анотація
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Ефективність застосування інтерактивних засобів теоретичної підготовки плавців 8-10 років

Мета: обгрунтування та розробка структури та змісту теоретичної підготовки плавців на етапі початкової підготовки та визначення ефективності впливу традиційних та інтерактивних засобів теоретичної підготовки на рівень теоретичної підготовленості спортсменів.

Матеріал і методи. Соціологічне опитування шляхом анкетування проводилося серед кваліфікованих плавців та тренерів-викладачів з метою встановлення актуальних проблем теоретичної підготовки плавців. Загальна кількість опитаних кваліфікованих плавців становила 32 особи, середній вік опитаних спортсменів був 17,40±0,48 року, жіночої статі — 68%, чоловічої — 32%. У експериментальному експерименті взяли участь юні плавці віком 8–10 років, які займалися на етапі початкової підготовки. Загальна кількість спортсменів становила 19 осіб. Сформовані дві експериментальні групи у підготовці яких застосовували як загальноприйняті засоби і методи теоретичної підготовки так і авторські інтерактивні засоби із застосуванням ігрового методу. Математико-статистичну обробку результатів проведено з використанням таких критеріїв, як: Шапіро-Уілкін (для перевірки на нормальність розподілу досліджуваних показників інших плавців), критерій Стьюдента (для незалежних та залежних випробувань у випадку нормального розподілу даних), U-критерій Манна-Уітні та Уілкоксона (для виявлення відсутності нормального розподілу даних); кореляційний аналіз між залежними і незалежними величинами та результатом.

Результати. Навчально-тренувальні заняття за розробленою програмою із застосуванням авторських інтерактивних засобів теоретичної підготовки сприяли достовірному (р<0,001) підвищенню загального рівня теоретичної підготовленості плавців на етапі початкової підготовки на 161,00%. Юні плавці, які віддали перевагу традиційній підготовці, збільшили час подолання змагальної дистанції у 39,87%.

Висновки. Теоретична підготовка є невід’ємною стороною у системі підготовки спортсменів. Використання інтерактивних засобів теоретичної підготовки здатні до визначення загального рівня теоретичної підготовленості плавців на етапі початкової підготовки. Загальна кількість спортсменів становила 19 осіб.

Ключові слова: плавання, теоретична підготовка, структура і зміст, інтерактивні засоби, ігри

Аннотация
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Эффективность применения интерактивных средств теоретической подготовки пловцов 8-10 лет

Цель: обоснование и разработка структуры и содержания теоретической подготовки пловцов на этапе начальной подготовки и определение эффективности влияния традиционных и интерактивных средств теоретической подготовки на уровень теоретической подготовленности спортсменов.

Материал и методы. Социологический опрос путем анкетирования проводился среди квалифицированных пловцов и тренеров-представителей с целью установления актуальных проблем теоретической подготовки пловцов. Общее количество опрошенных квалифицированных пловцов составляло 32 человека, средний возраст опрошенных спортсменов был 17,40±0,48 лет, мужского пола – 68%, женского – 32%. В педагогическом эксперименте участвовали юные пловцы 8–10 лет, которые занимались на этапе начальной подготовки. Общее количество спортсменов составило 19 человек. Сформированы две экспериментальные группы, в подготовке которых применяли как общепринятые средства и методы теоретической подготовки, так и авторские интерактивные средства с применением игрового метода. Математико-статистическую обработку результатов исследования проводили с использованием таких критериев, как: Шапиро-Уилки (для проверки на нормальность распределения доследуемых показателей пловцов), t-критерий Стьюдента (для независимых и зависимых выборок при нормальном распределении данных), U-критерий Манна-Уитни и Уилкоксона (при отсутствии нормального распределения данных); корреляционный анализ между соревновательным результатом и уровнем теоретической подготовленности и залежными выборок при нормальном распределении данных).

Результаты. Навчально-тренувальних заняттях за розробленою програмою із застосуванням авторських інтерактивних засобів теоретичної підготовки сприяли достовірному (р<0,001) підвищенню загального рівня теоретичної підготовленості плавців на етапі початкової підготовки на 161,00%. Юні пловці, які віддали перевагу традиційній підготовці, збільшили час подолання змагальної дистанції у 39,87%.

Висновки. Теоретична підготовка є невід’ємною стороною у системі підготовки спортсменів. Використання інтерактивних засобів теоретичної підготовки здатні до визначення загального рівня теоретичної підготовленості плавців на етапі початкової підготовки. Загальна кількість спортсменів становила 19 осіб.

Ключевые слова: плавание, теоретическая подготовка, структура и содержание, интерактивные средства, игры
Introduction

Swimming is one of the most popular sports in the world. It has been an Olympic sport since 1896. In Ukraine, this sport is also officially recognized as an Olympic sport. In our country, the Swimming Federation of Ukraine deals with its development. According to the number of sets of awards played at the Olympic Games, swimming takes second place after athletics. Sports swimming includes six disciplines: freestyle, breaststroke, backstroke, butterfly, medley, and relays. Such several sports disciplines, represented in the programs of the Olympic Games, testifies to the high interest of athletes from all over the world and sports organizations in supporting and popularizing sports swimming among the masses [1, 2, 3, 4]. One of the main tasks that are solved in the process of training swimmers is the acquisition of theoretical knowledge, which is necessary for successful training and competitive activities. [2, 4].

Theoretical training is a kind of base for all other aspects of training, which aims to arm the athlete with special knowledge [5, 6, 7]. In the fundamental work of Professor M.P. Pitin highlighted the general concept of theoretical training in sports, developed means and methods of theoretical training and forms of control over its level [3, 5]. In the work of V.Yu. Boguslavskaya presented the conceptual provisions of theoretical training, as well as the structure of theoretical training sessions for cycle sports [1, 2]. There are works that specify the structure and content, as well as means and methods of theoretical training in sports in accordance with the requirements of competitive and training activities [1, 5, 7]. However, as a result of the analysis of the swimming training program (1995) [8] data were obtained that within the initial training stage, the number of topics offered for consideration and the hours that should be allocated for their study are not indicated. The program material for theoretical training is presented only in general phrases: "familiarization with a rational daily regime, the basics of hygiene, rules of behavior at training classes."

In addition, the curriculum (2005) [8] revealed duplication of many topics from theoretical training at various stages of multi-year improvement of athletes in swimming. In our opinion, this impoverishes informational material, one-sidedly forms special knowledge among athletes.

At the same time, there are no data on the use of means and methods of theoretical training of swimmers, forms of control and criteria for evaluating the theoretical training of swimmers at the stage of initial training.

Thus, the scientific-applied problem of theoretical training in swimming identified by us is determined by the contradiction between the proven need for theoretical training and the lack of appropriate components in the program and regulatory provision of swimmers at the stage of initial training.

The hypothesis of our study was the assumption that the use of interactive means of theoretical training using the game method will effectively affect the level of theoretical training of swimmers at the stage of initial training.

The purpose of the work is to substantiate and develop the structure and content of the theoretical training of swimmers at the stage of initial training and to determine the effectiveness of the influence of traditional and interactive means of theoretical training on the level of theoretical training of athletes.

Material and methods

Participants

A sociological survey by means of a questionnaire was conducted among qualified swimmers and trainers-teachers to establish the actual problems of the theoretical training of swimmers.

The total number of interviewed qualified swimmers was 32 people, the average age of the interviewed athletes was 17.40±0.48 years, 68% were male, 32% were female. The experience of playing sports is 10.62±0.47 years. The total number of interviewed coaches was 17 people. Among the interviewees were 3 coaches of the highest category, 1 of them is an honored coach of Ukraine, 6 people are coaches of the first category, 8 people are coaches of the second category; the average age of the interviewees was 43.49 ± 0.44, 65% were male, 35% were female.

Young swimmers aged 8–10, who were practicing at the stage of initial training, took part in the pedagogical experiment. The total number of athletes was 19 people. Two experimental groups were formed, in the preparation of which both generally accepted means and methods of theoretical training were used, as well as the author's interactive means using the game method. Informed consent to participate in this experiment was obtained from all participants.
Procedure (organization of research)

As a result of the analysis and generalization of literary sources, the content of the Internet and documentary materials (current swimming curriculum), actual problems related to theoretical training in swimming were revealed. The lack of a clearly defined number of topics proposed for consideration at this stage of preparation and the number of hours that should be allocated to their study is characteristic of groups of initial training. The program material for theoretical training is presented only in general phrases: "familiarization with a rational daily regime, the basics of hygiene, rules of behavior at training classes."

The survey conducted by us among coaches-teachers and high-class athletes through questionnaires allowed us to determine the priority sources of information, the feasibility of using various means and methods of theoretical training, the importance of knowledge sections and individual topics on the theoretical training of athletes, the effectiveness of the forms of organization of classes and types of control over the level of theoretical preparation swimmers at the stage of initial training.

Based on the results of the survey, the structure and content of the theoretical training of swimmers at the stage of initial training was formed and it was determined that the most effective means of information transfer for young swimmers will be interactive (computer) tools using the game method.

The author's interactive tools for theoretical training have been developed. Namely, fifteen computer games: "History of the origin of swimming", "Olympic disciplines of sports swimming", "Games of Ancient Greece", "Who is depicted in the photo?", "Permitted and prohibited actions on the water", "Methods of transporting a drowning person", "Characteristics of injuries in swimmers. Causes and prevention", "Do you know the terms?", "Features of nutrition of young athletes", "Drinking regime. Vitamins and minerals in the diet of athletes", "Hygiene, hardening, nutrition", "Swimming techniques, starts and turns", "Who is who at swimming competitions?", "Choose the right subject", "Types of pools" (https://gubarivan.herokuapp.com/developments.html) (Fig. 1) [9].

Fig. 1. Interactive means of theoretical training of swimmers at the stage of initial training
Classes according to the developed structure and content of the theoretical training of swimmers were held during the preparatory period of the annual macrocycle. Classes were held once a week, lasting one academic hour. The total number of hours is 28, over seven months.

At the stage of the ascertainment experiment, through testing, we determined the preliminary level of theoretical preparedness of young swimmers.

At the stage of the formative experiment, the effectiveness of the influence of generally accepted (given in the current swimming curriculum) and author’s interactive means of theoretical training on the theoretical preparedness of swimmers at the stage of initial training was established. Processing of the test results was carried out using the methods of mathematical statistics.


![Fig. 2. The ratio of the amount of hours allocated for consideration of individual sections of theoretical training at the stage of initial training, in % (according to the results of a survey of trainers-teachers, n=17 and qualified athletes n=32)](attachment-url)
For the swimmers of the main group and the comparison group, the content of the theoretical lessons was the same. The difference was that only the tools and methods recommended by the state curriculum were used in the comparison group. Such as the study of literature, conversations, demonstration of posters, stands, educational films [8]. While the theoretical training of athletes of the main group also included interactive tools developed by us, namely 15 computer games on the topics of the theoretical training sections.

Interactive tools were used according to the following algorithm:
1) preliminary holding of a conversation (story) with athletes on the subject of the class.
2) familiarization of athletes with the content of the game.
3) placing each of the players on a separate PC (laptop).
4) helping (if necessary) to athletes during the game.
5) determination of the winner based on a set of factors (speed of solving the task, number of mistakes made).
6) analysis and discussion of the results of the game, indicating the advantages and disadvantages of the participants' actions.

For both groups, the duration of theoretical training was one academic hour per week. The total duration of theoretical training was 28 weeks.

Statistical analysis
Mathematical and statistical processing of the research results was carried out using such criteria as: Shapiro-Wilkie (to check the normality of the distribution of the studied indicators of swimmers), Student's t-test (for independent and dependent samples, since the data were subject to normal distribution); correlation analysis according to Pearson between the competitive result and the level of theoretical preparedness of swimmers at the stage of initial training. The critical level of significance when testing statistical hypotheses was used equal to 0.05 (p<0.05). The Statistica 13 program was used to process the research results.

Results
As a result of the analysis of the swimming curriculum (1995) [8], data were obtained that within the initial training stage, the number of topics proposed for consideration and the hours that should be allocated for their study are not indicated. The program material for theoretical training is presented only in general phrases: "familiarization with a rational daily regime, the basics of hygiene, rules of behavior at training classes."

In addition, the curriculum (2005) revealed duplication of many topics from theoretical training at various stages of multi-year improvement of athletes in swimming. In our opinion, this impoverishes informational material, one-sidedly forms special knowledge among athletes.

At the same time, there are no data on the use of means and methods of theoretical training of swimmers, forms of control and criteria for evaluating the theoretical training of swimmers at the stage of initial training.

Analyzing the answers of trainers-teachers, it was established that the most effective method is the game method, which was rated at an average of 4.58±0.14 points out of 5 possible. In terms of percentage, 64.70% of the surveyed teacher trainers evaluated this method by 5 points, 29.41% – by 4 points, 5.88% – by 3 points.

Among the qualified athletes, the game method was rated at an average of 4.37±0.11 points out of 5 possible. Thus, 46.87% of respondents rated this method at 5 points, 43.75% at 4, and 9.37% at 3.

Trainers and teachers recognized computer games as the most effective means of imparting theoretical knowledge to young swimmers at the stage of initial training, rating it at an average of 4.41±0.17 points out of 5 possible. At the same time, 52.94% of respondents rated it 5 points, 35.29% - 4 points, 11.76% - 3 points.

Among the surveyed high-class athletes, this tool was also recognized as the most effective, on average it was rated at 4.28±0.12 points. Thus, 40.62% of respondents rated computer games as a means of theoretical training by 5 points, 46.87% - by 4 points, 12.5% by 3 points.

"Testing" was recognized as the most effective form of control by both coaches and qualified athletes. Thus, 52.94% of trainers rated it at 4 points, 47.05% of trainers rated it at 5 points, which once again highlights the importance of this method at the stage of initial training. At the same time, 53.12% of qualified swimmers rated it at 4 points, and 46.87% of respondents rated it at 5 points, which once again proves the importance of testing at the initial training stage.

As a result of the conducted pedagogical experiment, it was established that the young swimmers of the comparison group were not
assimilating information in all sections of theoretical training where only generally accepted means of theoretical training were used [8]. Although a trend towards its growth has been established, which has contributed to a statistically probable increase in the general level of theoretical preparation of athletes. Thus, at the beginning of the study, the average assessment of the level of knowledge of athletes was 9.78±0.55 points, at the end - 13.68±0.76 points (the maximum number of points is 28). At the same time, in percentage terms, this indicator improved by 39.87% (p < 0.001).

In contrast, classes in the main group, where, in addition to the generally accepted means, interactive means of theoretical preparation using the game method were also used, contributed to a probable increase in the average statistical estimates of the level of theoretical preparation of athletes, for each separate section of the program. This is evidenced by a much higher degree of growth of average grades from 9.21±0.40 points at the beginning of the experiment and up to 24.10±0.47 points (maximum number of points - 28) in the final testing. Such a difference in percentage ratio equals 161.00% (p<0.001) (Table 1).

**Table 1**

<table>
<thead>
<tr>
<th>Section of knowledge’s name</th>
<th>Max points value</th>
<th>Main group (n=19)</th>
<th>Comparison group (n=19)</th>
<th>p-level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before investigation (points)</td>
<td>After investigation (points)</td>
<td>Before investigation (points)</td>
<td>After investigation (points)</td>
</tr>
<tr>
<td></td>
<td>p-level</td>
<td>p-level</td>
<td>p-level</td>
<td></td>
</tr>
<tr>
<td>The history of the development of swimming</td>
<td>6</td>
<td>1.84±0.20</td>
<td>4.84±0.21 ***</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Life safety and rules of behavior on the water</td>
<td>7</td>
<td>2.33±0.17</td>
<td>6.10±0.18 ***</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td></td>
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</tr>
<tr>
<td>Humanitarian knowledge in the training of swimmers</td>
<td>3</td>
<td>1.20±0.10</td>
<td>2.47±0.14 **</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Diet and swimmer’s hygiene</td>
<td>3</td>
<td>1.21±0.11</td>
<td>2.42±0.15 *</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Content of sports training in swimming</td>
<td>2</td>
<td>1.08±0.08</td>
<td>1.73±0.10 **</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Competitive swimming</td>
<td>5</td>
<td>1.68±0.17</td>
<td>4.73±0.10 ***</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Material and technical support for the training of swimmers</td>
<td>2</td>
<td>1.15±0.10</td>
<td>1.78±0.09 ***</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Total points</td>
<td>28</td>
<td>9.21±0.40</td>
<td>24.10±0.47 ***</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Notes: *– p<0.05, **– p<0.01, ***– p<0.001 when comparing the final indicators of the main group and the comparison group of swimmers
The correlation analysis of the general level of theoretical preparedness of swimmers of the main group with the time of swimming a competitive distance of 50 m revealed a close relationship between them (r=-0.72, p<0.05), which indicates that as the level of theoretical preparation decreases the time of overcoming the competitive distance. This may be related to the increase in the motivation of young swimmers to study, to acquire knowledge and improve their sports [10].

To determine gender differences in the effectiveness of the use of interactive means of theoretical training of swimmers at the stage of initial training, a comparison of the results between boys and girls of the main group was carried out.

It was established that at the beginning of the pedagogical study, there were no statistically significant differences between the group of boys and the group of girls. Thus, in the group of boys, the overall indicator of the level of theoretical preparation was 9.21±0.40, and in the group of girls it was 9.11±0.47 (p>0.05).

At the end of the pedagogical experiment, both in the group of boys and in the group of girls, the indicators probably increased relative to the initial level of theoretical preparation to 24.0±0.47 (p<0.001) in boys and to 24.20±0.40 (p<0.001) in girls. However, no significant difference was found between the indicators of boys and girls. Thus, the results of our research made it possible to establish that despite a significant increase in the level of theoretical preparation of young swimmers, under the influence of classes using interactive learning tools when applying the game method, no probable difference between the indicators of boys and girls was found.

Discussion

The actual problem of theoretical training of swimmers at the stage of initial training is due to the presence of contradictions between the urgent need for theoretical training and the lack of proper scientific and methodological justification of the structure and content of theoretical training in swimming; declared requirements for determining the level of preparedness of swimmers and the lack of objective criteria for its assessment.

Theoretical training of swimmers is an integral component in the system of long-term improvement, along with physical, functional, psychological, and technical-tactical training [5, 7, 11].

Analyzing current scientific publications, it was established that in the modern system of multi-year improvement of athletes engaged in cyclical sports, there is a fragmentation of content and mechanisms for the implementation of theoretical training, discrepancies, and ambiguity in the amount of workload, methods and means of information material and in the means of implementation of theoretical training.

At the same time, coverage of issues of theoretical training of swimmers is discrete and is presented fragmentarily only in separate scientific publications [2, 13], which actualizes the search for ways to develop and implement the structure and content of theoretical training in swimming at the stage of initial training.

One of the ways to solve this issue was a study conducted by M. P. Pitin [3, 5], which was devoted to the substantiation of the main provisions of the general concept of theoretical training in sports, which, unfortunately, did not include highlighting the specifics of theoretical training specifically in swimming. Scientific studies of V. Yu. Bohuslavskaya were aimed at developing the structure and content of the system of theoretical training of athletes at various stages of multi-year improvement in cycle sports at the paradigmatic, conceptual and operational levels, however, the implementation and testing of the developed concept took place with the involvement of rowers at the initial stage and the stage of preliminary basic training [1, 2].

Thus, we believe that theoretical training in swimming should correspond to the age characteristics of swimmers, the structure and content of competitive activities, as well as methodical aspects of training athletes, be systematized and ordered [4].

The current training program for swimming at the initial stage of training provides only a fragmentary generalization of the topics that need to be studied, namely, familiarization with a rational daily routine, the basics of hygiene, rules of behavior in training classes without specifying the number of training and training hours from theoretical training allocated to their mastery [8].

Thus, the results of our survey of trainers and qualified athletes indicate that not enough attention is paid to theoretical training in swimming.

The analysis of the answers of coaches-teachers regarding their desire to acquire new theoretical knowledge of swimming showed that the vast majority of respondents (76.47%) wish to acquire new knowledge, 17.64% wish to do so from time to time, and only 5.88% do not have needs for
new knowledge.

The distribution of coaches’ answers regarding the level of satisfaction with the theoretical training of their athletes at the stage of initial training showed that only 17.64% of the surveyed respondents were satisfied with the level of theoretical training, and the rest - 82.35% were completely dissatisfied.

Such data confirm the results of research by other scientists, which indicate the inconsistency of software and methodological support of the training process of young swimmers with modern requirements for sports training [12, 13, 14].

So, as a result of our research, information about the importance of theoretical training in swimming as a factor in improving results in training and competitive activities has gained further development [2, 5, 8, 12, 13].

The content of means of theoretical training of swimmers at the stage of initial training has been improved by specifying them in accordance with the requirements of competitive and training activities in swimming. Also, the requirements for the theoretical preparation of swimmers at the stage of initial training have been improved.

In our research, we used available methods and means and forms of control of theoretical training proposed by M.P. Pityn (2015) [3, 5], which were specified by us in accordance with the requirements of the theoretical training of swimmers at the stage of initial training.

In the literary sources, information was found regarding the verification of the effectiveness of the use of theoretical training tools on the example of such types (groups of types) of sports as martial arts [7, 15, 16, 17], athletics throwing [18], cycling [19], sports games [20] rowing on kayaks and canoes [1, 2, 11, 21]. At the same time, no information was found regarding the use of these means and methods in swimming.

As a result of the conducted research, the information content of the components of the theoretical training of swimmers at the stage of initial training was substantiated for the first time. The structure and content of training sessions on the theoretical training of swimmers at the stage of initial training have been developed. A high correlation between the general level of theoretical preparedness of swimmers of the main group and the time of swimming a competitive distance of 50 m was revealed, which indicates that with an increase in the level of theoretical preparedness, the time to overcome the competitive distance decreases. It was established that there are no gender differences between the indicators of theoretical readiness of boys and girls swimmers aged 8-10 years.

Prospects for further research will be aimed at improving the theoretical training of swimmers at various stages of sports improvement.

**Conclusions**

Theoretical training is an integral part of the system of training athletes. The use of interactive means of theoretical training with the use of the game method (computer games) in the process of theoretical training of young swimmers significantly increases its effectiveness, in contrast to classes in which only traditional means and methods were used (study of special literature, story, conversation, demonstration of stands, documentaries) theoretical training. At the same time, it was established that there are no gender differences between the indicators of theoretical readiness of boys and girls swimmers 8-10 years old. In addition, a high correlation was found between the general level of theoretical preparedness of swimmers of the main group and the time to cover the competitive distance of 50 m, which indicates that with an increase in the level of theoretical preparation, the time to cover the competitive distance decreases.

**Conflict of interest**

The authors declare that there is no conflict of interest that could harm the impartiality of the article.

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