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Selection of supplementary exercises in breaststroke technique for students of course 56 in physical education, Thai Nguyen University of Education

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Abstract

This article is the result of research on selecting supplementary exercises for breaststroke technique for students majoring of course 56 in Physical Education, Thai Nguyen University of Education on the following issues: Current status of staff and lecturers teaching physical education to students; Current status of facilities to serve the teaching and learning of Physical Education in the University; Selecting a system of exercises to supplement breaststroke technique for students majoring of course 56 in the Physical Education at the Thai Nguyen University of Education; Experiment and compare the application results of supplementary exercises for students learning swimming. Research results show that: After selecting and applying a system of exercises to support breaststroke technique for students majoring of course 56 in the Physical Education at the Thai Nguyen University of Education, the achievement results Swimming of the experimental group of students increased significantly, which contributed to improving the quality of teaching Swimming for physical education students in general and students in the university in particular.

Keywords: Students, supplementary exercises, physical education, breaststroke, Thai Nguyen University of education

1. Introduction

Swimming is a compulsory subject for students of Physical Education of the Department of Physical Education and Sports, Thai Nguyen University of Education. Through actual observation of breaststroke technique lessons of students in the department, we see that most of students make the following mistakes: Putting their arms forward too deep, causing their hips to sink, not straightening their arms completely when stretching forward, the hand fans back too much, the hand stops under their chin, the knee is pulled in, not pulled in with the heel. The legs are pulled in too late when the head and shoulders are down, unable to turn the toes (Foot of the hoe) outward but the soles of the legs are facing straight back, the legs are not completely straight, when the cycle ends, do not press the legs close together, or there is no stage for water surfing. The movements of arms, legs, and breathing are not coordinated. So how to solve this problem?

Therefore, improving the effectiveness of learning swimming in general and learning to swim Breaststroke in particular for students of course 56 of the Physical Education at the Thai Nguyen University of Education outside of regular class time with a system Exercises to support breaststroke technique during extracurricular hours are very necessary.

This study aims to evaluate the current status of learning swimming of course 56 students in the Department of Physical Education at the Thai Nguyen University of Education. And from there, select exercises to supplement breaststroke technique for course 56 students in the Department of Physical Education at the Thai Nguyen University of Education. Quickly learn breaststroke techniques and determine the effectiveness of those exercises.

2. Research Methods

The research process uses the following methods: Document analysis and synthesis method; Interview method; Pedagogical observation method; Experimental method of pedagogy; Statistical mathematical methods...Pedagogical survey and experiment at the Faculty of Physical Education and Sports, Thai Nguyen University of Education.

Time of survey and research: from August 2022 to May 2023.

The number is 20 of 3rd year students majoring in PE (Including 10 males and 10 females). Data were collected through collaborators and physical education lecturers at the Thai Nguyen University of Education.

3. Research Results and Discussions

Table 1: Basic mistakes often made when performing the breaststroke technique

No	Basic mistakes that are often made
1	Do not turn your feet out to the sides when treading water.
2	Pedal your feet too wide to the sides.
3	Pedal and close your legs separately or just pedal without closing.
4	When flexing and pedaling the legs, the position of the legs is too low compared to the water surface.
5	When flexing and pedaling your legs, your buttocks moves up and down too much.
6	Flex your legs too quickly.
7	Poor fanning effect: due to when fanning, the hand rubs the water.
8	The hand fan line is too wide.
9	Stretching your arms forward too quickly.
10	Hand fan and foot pedal at the same time.
11	Incomplete exhalation, delayed breathing. (Easy to choke on water).

3.2. Selecting exercises to support breaststroke technique for course 56 students majoring in Physical Education at Thai Nguyen University of Education: We provide 2 groups of exercises to support breaststroke technique

3.1. Identifying basic mistakes that are often made when performing breaststroke techniques by students majoring in Physical Education, Thai Nguyen University of Education

When learning and performing breaststroke techniques, students often make some of the following basic mistakes, presented in table 1.

including 10 exercises on land and 10 exercises in water to conduct interviews with 25 experts who are teaching Physical Education and Swimming inside and outside of the university.

Table 2: Interview results for selecting supplementary extracurricular exercises for students majoring in Physical Education, Thai Nguyen University of Education (n = 25)

No	Number of votes issued	Number of votes received	Number of votes approved	Percentage
Exercise 1: Sitting and practicing pedaling frog legs	25	25	18	72%
Exercise 2: Lying prone and pedaling frog legs with help from a friend	25	25	11	44%
Exercise 3: Lying prone on a chair and pedaling frog legs with help from a friend	25	25	17	68%
Exercise 4: Lying prone on a chair and pedaling frog legs	25	25	20	80%
Exercise 5: Lying prone, tying a rubber band to your feet and pedaling the frog legs	25	25	21	84%
Exercise 6: Standing and pulling the rubber band from top to bottom	25	25	19	76%
Exercise 7: Lying on a chair and fanning hand with a rubber band	25	25	12	48%
Exercise 8: Standing and holding a stick connected to a rubber band then fanning hand from top to bottom	25	25	17	68%
Exercise 9: Breaststroke arm fan with rubber band	25	25	19	76%
Exercise 10: Standing and practicing to simulate breaststroke technique	25	25	17	68%
Exercise 11: Holding hands on the edge of the pool to practice frog legs with help from a friend	25	25	22	88%
Exercise 12: Holding hands on the edge of the pool to practice frog legs	25	25	17	68%
Exercise 13: Holding hands on a moving pole, practicing pedaling frog legs	25	25	16	64%
Exercise 14: Holding your hands on a friend, practicing pedaling frog legs	25	25	11	44%
Exercise 15: Holding a buoy or a surfboard while practicing pedaling	25	25	20	80%
Exercise 16: Hands leaning on the edge of the pool and pushing the body up and down	25	25	11	44%
Exercise 17: Hand fanning with someone helping	25	25	18	72%
Exercise 18: Walking underwater, hand fanning combined with breathing	25	25	19	76%
Exercise 19: Lying prone, hook your feet to the ladder and practice frog-arm fanning	25	25	16	64%
Exercise 20: Step on the wall of the pool to surf the water, coordinating legs - arms - breathing	25	25	18	72%

With 20 supplementary exercises interviewed, we selected 16 exercises with a selection rate of over 50% or more.

3.3. Evaluate the effectiveness of selected technical supplementary exercises

Experimental group: Includes 10 students including 6 males and 4 females in physical education class course 56.

Outside of class, we practice according to the extracurricular plan using the supplementary exercises we have selected.

Real control group: Includes 10 students including 6 males and 4 females in physical education class course 56. This group trained according to the main lesson plan of the extracurricular training course under the instructions of the

swimming instructor of the Department of Physical Education and Sports-The Thai Nguyen University of Education is still teaching. To create objectivity in the grouping, we divided two groups that were equivalent in terms of number of people in the group, gender between men and women, and age and initial swimming level.

Test the initial swimming proficiency of students in two groups. When testing the initial swimming level, let the students of the two groups swim 20m and evaluate them by score (10-point scale), not counting time. The scoring method for swimming technique and performance is applied according to Table 3.

Table 3: Results of the initial swimming proficiency test of the 2 groups before the experiment (gA = 10,gB =10)

No	Quantity (G =10) Statistical parameter	g1	g2	g3	g4	g5	g6	g7	g8	g9	g10	
1	Point X_i	Group A	2	1	1	2	3	1	2	2	4	2
		Group B	4	2	1	3	1	2	2	4	2	3
2	\bar{X}	Group A	2									
		Group B	2, 4									
3	δ_c	$\pm 0, 244$										
4	t_{test}	1, 095										
5	t_{table}	1, 383										

Through the results of Table 3, we see that the initial swimming levels of the two groups are not different. With the results calculated in the table at the probability threshold $p > 0.05$. This proves that our grouping is random, the two groups have similar initial swimming levels.

We built a training process with 20 lesson plans and applied it to the following subjects: Course 56 students of the Department of Physical Education and Sports, University of Education - TNU (Experimental group), presented in table 4.

Table 4: Experimental progress

Lesson plan implemented Supplementary exercises	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Exercise 1: Sitting and practicing pedaling frog legs	+	+	+																	
Exercise 3: Lying prone on a chair and pedaling frog legs with help from a friend	+	+	+	+	+	+														
Exercise 4: Lying prone on a chair and pedaling frog legs						+	+	+	+	+										
Exercise 5: Lying prone, tying a rubber band to your feet and pedaling the frog legs									+	+	+									
Exercise 6: Standing and pulling the rubber band from top to bottom										+	+	+	+							
Exercise 8: Standing and holding a stick connected to a rubber band then fanning hand from top to bottom												+	+	+	+	+				
Exercise 9: Breaststroke arm fan with rubber band																	+	+	+	+
Exercise 10: Standing and practicing to simulate breaststroke technique																		+	+	+
Exercise 11: Holding hands on the edge of the pool to practice frog legs with help from a friend	+	+	+	+	+															
Exercise 12: Holding hands on the edge of the pool to practice frog legs	+	+	+	+	+	+														
Exercise 13: Holding hands on a moving pole, practicing pedaling frog legs						+	+	+	+											
Exercise 15: Holding a buoy or a surfboard while practicing pedaling									+	+	+									
Exercise 17: Hand fanning with someone helping										+	+	+								
Exercise 18: Walking underwater, hand fanning combined with breathing												+	+	+	+					
Exercise 19: Lying prone, hook your feet to the ladder and practice frog-arm fanning															+	+	+	+		
Exercise 20: Step on the wall of the pool to surf the water, coordinating legs - arms - breathing																	+	+	+	+

3.4. Evaluate experimental results: We proceed to evaluate the experimental results. The results of the 50 m

breaststroke swimming test of the 2 groups after the experiment are presented in Table 5.

Table 5: Results of 50 m breaststroke swimming test of 2 groups after the experiment (gA = 10,gB =10)

No	Quantity (G =10) Statistical parameter	g1	g2	g3	g4	g5	g6	g7	g8	g9	g10	
1	Points X_i	Group A	9	8	9	8	7	9	8	9	7	6
		Group B	6	7	8	7	7	6	9	8	7	9
2	\bar{X}	Group A	8									
		Group B	7, 4									
3	δ_c	$\pm 0, 856$										
4	t_{test}	1, 45										
5	t_{table}	1, 383										

As shown in table 5 we see that after 10 weeks of training between two groups: control group and experimental group, the results obtained are:

- + Control group: = 7.4±0.856
- + Experimental group: = 8±0.856

The results show that $t_{test} = 1.45 > t_{table} = 1.383$. So the average number of two groups is significantly different at the probability threshold $p < 0.05$.

From the test results of the two groups after the experiment, the author compared them with the test results of the two groups before the experiment as presented in Table 6.

Table 6: Comparison of test results of the two groups before the experiment and after the experiment

No	Name Statistical parameter	Before experimenting	After experimenting
1	\bar{X}		
	Group A Experimental group (gA = 10)	2	8
	Group B Control group (gB= 10)	2, 4	7, 4
2	δc	$\pm 0, 244$	$\pm 0, 856$
3	t_{test}	1, 095	1, 45
4	t_{table}	1, 383	1, 383

Table 8, we see: after the experiment, $t_{test} = 1.45$ was greater than the pre-experiment result, $t_{test} = 1.095$. The test results of the two groups after the experiment compared to before the experiment increased clearly.

To be clearer, the author shows the results on a chart comparing the results of the two groups before the experiment with the two groups after the experiment.

4. Conclusion

The research results have selected a system of 16 exercises to support breaststroke swimming technique for course 56 students majoring in Physical Education at the Thai Nguyen University of Education. Conduct an assessment of initial swimming performance and experimentally apply exercises to support breaststroke technique over a period of 10 weeks. Comparing initial achievements with achievements after conducting the experiment shows that the experimental group has higher achievements than the control group. This result shows that a system of exercises to supplement breaststroke technique for course 56 students majoring in Physical Education at the Thai Nguyen University of Education is necessary and helps students improve their technical learning achievements in breaststroke swimming.

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