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Selection Of Vovinam's Extracurricular Training Content To Develop Physical Fitness For High School Students In Iris Primary, Middle And High School (Thai Nguyen Province – Vietnam)

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Summary:

Using regular scientific research methods, the study has evaluated the current status of physical education for students at High school of Iris Primary, Lower-secondary & Upper-secondary School, Thai Nguyen (Vietnam) on the following contents: Curriculum, teachers, learning results, and physical training status of students. The research results will serve as a basis for proposing solutions to improve the effectiveness of physical education as well as the learning outcomes of the school's students.

Keywords: *Current status, Physical education, Subject program, students, IRIS Primary, Lower-secondary & Upper-secondary School.*

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Question:

Improve the quality and effectiveness of physical education and school sports to improve health, develop comprehensive physical fitness, equip knowledge and basic movement skills, and form exercise habits. Regular sports for children, pupils, and students; linking physical education and school sports with education of will, ethics, lifestyle, and life skills; Meets the needs of healthy entertainment for children and students, while contributing to discovering and training sports talents and talents for the country.

Based on the current situation of physical education work at elementary, middle, and high schools, IRIS found: Extracurricular physical education programs for students; Training organization process; Inspection, evaluation, and quality assurance; Organization of extracurricular sports activities; Teaching staff and facilities; Evaluate students' physical education subjects; Assessing the current status of the impact of physical education on the physical development of students still has many shortcomings. Therefore, with the desire to improve the effectiveness of the unit's physical education work; Through the traditional martial art (Vovinam) to develop physical strength and educate students' qualities, the authors conducted ***the*** research " ***Selecting extracurricular training content for Vovinam to develop students' physical strength." High school students of Iris Primary, Lower-secondary & Upper-secondary School (Iris School) in Thai Nguyen*** ".

I. Research methods:

During the research process we use the following methods: Synthesis and analysis of documents; interview method; pedagogical observations; Pedagogical testing, pedagogical experiments, and statistical mathematics.

II. Research results

A. Select Vovinam martial arts extracurricular training content to develop physical fitness for high school students at IRIS Primary, Lower-secondary & Upper-secondary School

To select extracurricular Vovinam practice content for high school students at Iris Primary, Lower-secondary & Upper-secondary School, the research is approached from the perspective of inheriting the appropriate content of the current program, selecting and adjusting it. some necessary content according to the requirements to be met by the high school sector in the 2018 Physical Education Program, as well as the regulations of the Vietnam Vovinam Federation, from there, select the content suitable for the target group of high school students and proceed. Interview to get expert opinions on selected content. Specific results are in Table 1.

Based on the program of the Vietnam Vovinam Federation, the study provides detailed knowledge, including:

1. Martial arts theory and competition rules: includes the theory of martial arts at Lam Belt I level; Preventing injuries in Vovinam training and competition; Some basic rules in Vovinam competition (Competition area; scoring criteria; penalty errors,...). Theoretical content will be integrated and applied in related practical activities such as practicing martial arts and fighting.

2. Basic techniques: includes knowledge of blue belt level I according to regulations of the Vietnam Vovinam Federation such as falling method; targeted mobile punching and kicking; 4 strokes from 5-8; Apply combat strategies to practice foot attacks, strategic stances, counter attacks and basic disarms,...

3. Fist: The Cross of Fist.

This is a kata composed of 10 strategic positions (in the order of strategic positions 1, 3, 5, 7, 9, 2, 4, 6, 8, 10) to help practitioners practice the ability to combine Basic techniques and strategic positions form a series of movements at a higher level (in terms of accuracy, speed, strike force, etc.). As for Jiu-Qi Kung No. 1, with its specific speed and movement technique, it is mainly for the elderly, so the study did not select it.

4. Basic moves: including, Women's self-defense, Multi-hand training, Strategic moves from numbers 1 to 15. These contents are mainly combined from basic techniques learned into complete lessons for practice, advanced practice and use at performances and tournaments so students can easily access it.

5. Martial Music: Martial Music is a term commonly used to refer to the combination of martial arts and musical arts within a specific association or sect. This is a unique method that combines physical and mental elements, creating a uniquely integrated experience for performers and viewers.

As for martial music content in Vovinam, there are currently two forms: using prescribed kata exercises, combined with music; Another form is to use creative songs, combined with music. Based on the content of Lam Belt I level and instructions from the Vietnam Vovinam Federation, research and select Martial Music No. 1 (Appendix 2 of the newly developed Program) to include in the teaching content for students in the unit.

6. Content of movement games and physical development exercises: taught integrated in lessons. The content will be selected by the teacher by the requirements of the lesson during the lesson plan development process to help learners choose and participate in physical game activities. Activities in accordance with the requirements and lesson content to support the teaching and development process Developing students' physical qualities.

7. Review, test, and evaluate: The process of reviewing, testing, and evaluating at each belt level according to the guidance of the Vietnam Vovinam Federation currently mainly uses oral or multiple-choice forms for theoretical content. Martial arts theory and practical exam for martial arts knowledge after students undergo a training process that meets the expertise and time of that belt level.

For the new program, starting from the criteria of closely following and meeting the 2018 Physical Education Program, the testing and evaluation process will be developed by the author according to the orientation of the current high school general education program (including 04 tests). periodically and several regular tests with diverse forms such as teachers evaluating students; students evaluating each other; and students evaluating themselves. Evaluation results are an important basis to help students develop. about your qualities and abilities, thereby contributing to improving the effectiveness of teaching in the unit. To assess the level of responsiveness of the selected researched content, we asked for opinions from experts—science, and physical education lecturers. The results are shown in Table 1.

Table 1. Interview results on Vovinam practice content for high school students at Iris Primary, Lower-secondary & Upper-secondary School

TT	Content	Number of periods	Interview results (n = 30)	
			Agree	%
1	Martial arts theory and competition rules	*	30	100.0
2	Basic techniques	15	30	100.0
3	Rights (The Cross of Rights)	6	29	96.7
4	Basic moves (Women's self-defense, Multi-hand training, Strategic moves from 1 to 15)	27	28	93.3
5	Martial music	15	30	100.0
6	Sports games and exercises to develop physical strength	*	30	100.0
7	Review, Test, Evaluate	7	30	100.0
	Total:	**70**		

Table 1 shows that the interview results were agreed upon by scientists and lecturers with a high agreement rate of 90% or more for the 07 proposed contents. This confirms that the division of time of the component content is reasonable, fully meets the requirements to be met and the ratio of the number of periods corresponds to the

optional sports content of high school students in the 2018 Physical Education Program, appropriate to students' time conditions.

B. Evaluating the effectiveness of Vovinam martial arts extracurricular training content on the physical development of high school students at IRIS Primary, Lower-secondary & Upper-secondary School.

**** Assess the physical fitness of students in the experimental group and the control group before the experiment***

Before the experiment, the study conducted a general physical fitness test in both the control group and the experimental group through 6 tests according to Decision 53 of the Ministry of Education and Training. The results obtained are presented in Table 2.

Table 2. General physical fitness assessment of students in the experimental group and control group before experiment

TT	Content	TN Group		DC Group		t	p
		$\overline{X}$	$\pm\delta$	$\overline{X}$	$\pm\delta$		
Group of male students		**n =40**		**n =35**			
1	Grip strength of the dominant hand (KG)	42.62	3.25	42.73	2.47	0.28	> 0.05
2	Supine abdominal flexion (times/30 seconds)	20.55	2.82	20.68	2.46	0.62	> 0.05
3	Standing long jump (cm)	221	16.43	224	16.90	0.24	> 0.05
4	30-meter XPC run (s)	5.58	0.47	5.53	0.50	0.47	> 0.05
5	4x10-meter shuttle run (s)	12.45	1.30	12.38	0.66	0.35	> 0.05
6	5-minute free running (m)	1007	242	1010	272	0.80	> 0.05
Group of female students		**n =60**		**n =65**			
1	Grip strength of the dominant hand (KG)	26,28	2.32	26.44	2.49	0.66	> 0.05
2	Supine abdominal flexion (times/30 seconds)	16.32	3.14	16.49	3.16	0.56	> 0.05
3	Standing long jump (cm)	154.2	9.92	154.6	8.60	0.75	> 0.05
4	30-meter XPC run (s)	6.69	0.70	6.64	0.72	0.35	> 0.05
5	4x10-meter shuttle run (s)	13.09	1.31	13.04	1.23	0.29	> 0.05
6	5-minute free running (m)	862	62.8	861	64.9	0.65	> 0.05

The results in Table 2 show that the above physical fitness indexes of all 6 test contents have $t_{calculation} < t_{table}$. Thus, the general physical strength of female and male students in the experimental group and the control group before the experiment was similar, the difference was not statistically significant with $p > 0.05$.

**** Evaluate the effectiveness of extracurricular Vovinam practice on the physical development of high school students at IRIS Primary, Middle and High School***

After the experiment, the physical fitness test results of two groups of male students and female students, the experimental group and the control group, are shown through a comparison of the average values presented in Table 3.

Table 3. Assess the physical fitness of students in the experimental group and students in the control group after the experiment

TT	Content	TN Group		DC Group		t	p
		$\overline{X}$	$\pm\delta$	$\overline{X}$	$\pm\delta$		
Group of male students		**n =40**		**n =35**			
1	Grip strength of the dominant hand (KG)	44.65	3.47	43.52	2.48	4.02	< 0.05
2	Supine abdominal flexion (times/30 seconds)	22.76	2.85	21.75	2.78	2.65	< 0.05
3	Standing long jump (cm)	228	15.83	224	15.50	5.18	< 0.05
4	30-meter XPC run (s)	5.02	0.65	5.42	0.72	2.83	< 0.05
5	4x10-meter shuttle run (s)	11.61	0.74	12.22	0.85	3.52	< 0.05
6	5-minute free running (m)	1023	95	1015	105	3.46	< 0.05
Group of female students		**n =60**		**n =65**			
1	Grip strength of the dominant hand (KG)	27.85	2.29	27.07	2.01	3.0	< 0.05
2	Supine abdominal flexion (times/30 seconds)	18.08	3.54	16.69	3.56	4.2	< 0.05
3	Standing long jump (cm)	157.6	8.52	155.2	8.08	4,6	< 0.05

4	30-meter XPC run (s)	6,10	0.65	6.43	0.66	2.5	< 0.05
5	4x10-meter shuttle run (s)	12.50	1.05	12.90	1.12	2.8	< 0.05
6	5-minute free running (m)	875	55.8	867	63.1	5.8	< 0.05

Table 3 shows that after the experiment, the physical strength of male students in the experimental group increased significantly in all 6 tested indicators, and 6 of them were much better than those in the control group, namely squeeze force of the dominant hand, lying on the back, doing long jumps on the spot, running 30m XPC, running 4x10m shuttle and running at your own pace with statistically significant differences, with $p < 0.05$.

After the experiment, the physical strength of female students in the experimental group also increased significantly in all 6 tested indicators compared to female students in the control group, the difference was statistically significant with $p < 0.05$.

Thus, after applying the new program content of Vovinam, physical training results have increased. The results of the experimental group's physical fitness development allowed us to confirm that the program content selected and applied by the study had practical value, initially contributing to improving the general physical fitness of the school's students.

**** Physical fitness assessment before and after the experiment of the experimental group***

To assess physical fitness Before and after the experiment of students in the experimental group, the study evaluated the results before and after the experiment of male students in the experimental group and female students in the experimental group as shown in Table 4 :

Table 4. Physical fitness assessment before and after the experiment of students in the experimental group

TT	Content	Before TN		After TN		t	W%	p
		$\overline{X}$	$\pm\delta$	$\overline{X}$	$\pm\delta$			
Group of male students		**n = 40**						
1	Grip strength of the dominant hand (KG)	42.62	3.25	44.65	3.47	5.07	**4,6**	< 0.05
2	Supine abdominal flexion (times/30 seconds)	20.55	2.82	22.76	2.85	5.97	**10.2**	< 0.05
3	Standing long jump (cm)	221	16.43	228	15.83	7.86	**3.1**	< 0.05
4	30-meter XPC run (s)	5.58	0.47	5.02	0.65	3.45	**10.5**	< 0.05
5	4x10-meter shuttle run (s)	12.45	1.30	11.61	0.74	3.81	**6.9**	< 0.05
6	5-minute free running (m)	1007	242	1023	95	7.58	**2.6**	< 0.05
Group of female students		**n = 60**						
1	Grip strength of the dominant hand (KG)	26,28	2.32	27.85	2.29	5.81	**5.8**	< 0.05
2	Supine abdominal flexion (times/30 seconds)	16.32	3.14	18.08	3.54	5.31	**6.2**	< 0.05
3	Standing long jump (cm)	154.2	9.92	157.6	8.52	6.12	**2,2**	< 0.05
4	30-meter XPC run (s)	6.69	0.70	6,10	0.65	4.01	**7.2**	< 0.05
5	4x10-meter shuttle run (s)	13.09	1.31	12.50	1.05	3.05	**4,6**	< 0.05
6	5-minute free running (m)	862	62.8	875	55.8	9.28	**2.5**	< 0.05

Go to Table 4 The study obtained growth rate indices in two experimental groups of men and women as follows:
- Dominant hand grip strength: increased by 4.6% in men, 5.8% in women
- Lying on your back and doing crunches: Men increase 10.2%, women increase 6.2%
- On-site distance jump: Men increased by 3.1%, women increased by 2.2%
- 30m XPC run: Men increased 10.5%, women increased 7.2%
- 4x10m shuttle run: Men increased 6.9%, women increased 4.6%
- Run at your own pace for 5 minutes: Men increase 4.0%, women increase 1.5%

Thus, for the male and female groups, there are 3 indicators growing above 5%, the remaining indicators all growing above 2%. The average growth rate in men is 6.31% and in women is 4.75%. Comparing the level of improvement after the experiment with that before the experiment of male and female experimental group students both demonstrated a statistically significant difference with $p < 0.05$.

**** Physical fitness assessment before and after the experiment of the control group***

The results of the physical fitness test of male and female students in the control group are presented in Table 5.

Table 5. Physical assessment before and after the experiment of students in the control group

TT	Content	Before the experiment		After the experiment		t	W%	p
		$\overline{X}$	$\pm\delta$	$\overline{X}$	$\pm\delta$			
Group of male students		**n=35**						
1	Grip strength of the dominant hand (KG)	42.73	2.47	43.62	2.48	2.40	**2,1**	< 0.05
2	Supine abdominal flexion (times/30 seconds)	20.68	2.46	21.75	2.78	2.89	**5.0**	< 0.05
3	Standing long jump (cm)	224	16.90	225	15.50	1.05	**0.4**	< 0.05
4	30-meter XPC run (s)	5.53	0.50	5.42	0.72	0.64	**2.0**	< 0.05
5	4x10-meter shuttle run (s)	12.38	0.66	12.22	0.85	0.64	**1,3**	< 0.05
6	5-minute free running (m)	1010	272	1015	105	2.85	**0.5**	< 0.05
Group of female students		**n = 65**						
1	Grip strength of the dominant hand (KG)	26.44	2.49	27.07	2.01	2.65	**2,4**	< 0.05
2	Supine abdominal flexion (times/30 seconds)	16.49	3.16	16.89	3.56	1.33	**2,3**	< 0.05
3	Standing long jump (cm)	154.6	8.60	155.2	8.08	4.2	**1,3**	< 0.05
4	30-meter XPC run (s)	6.64	0.72	6.43	0.66	1.48	**3.2**	< 0.05
5	4x10-meter shuttle run (s)	13.04	1.23	12.90	1.12	0.31	**1.1**	< 0.05
6	5-minute free running (m)	861	64.9	867	63.1	4.28	**0.7**	< 0.05

Table 6 shows that the growth rate of test indicators in students in the control group is as follows:
- Dominant hand grip strength: increased by 2.1% in men, 2.4% in women
- Lying on your back and doing crunches: Men increase 5.0%, women increase 2.3%
- On-site distance jump: Men increased by 0.44%, women increased by 1.3%
- 30m XPC run: Men increased 2%, women increased 3.2%
- 4x10m shuttle run: Men increased 1.3%, women increased 1.1%
- Run at your own pace for 5 minutes (Endurance): Men increase 0.49%, women increase 0.7%

The above results show that: After the experiment, the control group also had growth in all 6 indicators, of which 2 indicators for men and women were higher than 3%, and the remaining indicators were all lower than 3%. The average growth rate of the control group in men is 1.88%, in women it is 1.83%. Comparing the level of improvement after the experiment compared to before the experiment, there are 3 indicators: the force of squeezing with the dominant hand, lying on the back, doing sit-ups, and running for 5 minutes depending on the strength in men and the strength of squeezing with the dominant hand, jumping on the spot, running for 5 minutes depending on the strength. strength in women is statistically significant with $p < 0.05$. Although the remaining indicators in both men and women increased, they were only random with $p > 0.05$. Thus, the current Vovinam extracurricular program does not ensure the development of different aspects of physical fitness for students.

**** Evaluate the growth rate of the control group and the experimental group after the experiment***

Based on the growth rate results obtained in Tables 4 and 5, the study evaluated the growth rate of the control group and the experimental group after the experiment. The results are presented in Table 6.

Table 6: Assessment of the growth rate of the control group and experimental group after the experiment

TT	Content	TN Group	DC Group	Compare	
				Time	$S_{(-)}$
Group of male students					
1	Grip strength of the dominant hand (KG)	**4,6**	**2,1**	**2,2**	**0**
2	Supine abdominal flexion (times/30 seconds)	**10.2**	**5.0**	**2,1**	
3	Standing long jump (cm)	**3.1**	**0.4**	**7.75**	
4	30-meter XPC run (s)	**10.5**	**2.0**	**5.25**	
5	4x10-meter shuttle run (s)	**6.9**	**1,3**	**5.3**	
6	5-minute free running (m)	**2.6**	**0.5**	**5.2**	
$\overline{W}$		**6.31**	**1.88**	**3.36**	**0**
Group of female students					
1	Grip strength of the dominant hand (KG)	**5.8**	**2,4**	**2,4**	**0**
2	Supine abdominal flexion (times/30 seconds)	**6.2**	**2,3**	**2.7**	
3	Standing long jump (cm)	**2,2**	**1,3**	**1.7**	
4	30-meter XPC run (s)	**7.2**	**3.2**	**2,2**	
5	4x10-meter shuttle run (s)	**4,6**	**1.1**	**4.2**	
6	5-minute free running (m)	**2.5**	**0.7**	**3.6**	

$\overline{W}$	**4.75**	**1.83**	**2.6**	**0**

The results of Table 6 show that all fitness assessment indexes of the two experimental and control groups had clear growth. However, the growth in men in the experimental group appeared to be stronger, at least 2.6% (running 5 minutes depending on strength) and at most 10.5% (running 30 minutes XPC) and an average of 6.31 %. Meanwhile, the growth rate in men in the control group appeared to be weaker, at least 0.4% (on-the-spot jumps) and at most 5% (supine crunches), an average of 1.88%.

The results also showed that the growth rate of males in the experimental group in all survey items increased from 2.1 times to 7.75 times more than the control group, with an average increase of 3.36 times. Comparing the growth rate of the two groups through the sign index S when considering each content as an individual, shows that $S_{(-)} = 0 = S_{0.05} = 0$, demonstrating the difference in growth rate. Growth is statistically significant with probability $p < 0.05$.

- The general physical fitness assessment indexes of both groups of female students in the experimental group and the control group all increased. However, the growth in the TN group was more prominent, at least in the on-site long jump index (2.2%) and most in the 30m XPC running index (7.2%), averaging 4.75%. Meanwhile, the growth rate in women in the control group was weaker, at least in the 5-minute free running event (0.7%), most in the 30m XPC running index (3.2%), and the average reached 1.83%.

The results also showed that the growth rate of the experimental group in all survey content increased from 1.7 times to 4.2 times more than the control group, with an average increase of 2.6 times. Comparing the growth rate of the two groups through the sign index S when considering each content as an individual, shows that $S_{(-)} = 0 = S_{0.05} = 0$, demonstrating the difference in growth rate. Growth is statistically significant with probability $p = 0.05$.

III. Conclude

Based on the program of the Vietnam Vovinam Federation, the authors researched and selected appropriate training content for the research subjects. At the same time, the interview results were agreed by scientists and lecturers with a high agreement rate of 90% or more for the 07 proposed contents. Content includes Martial arts theory and competition rules; Basic techniques; Rights (The Cross of Rights); Basic moves (Women's self-defense, multi-skilled unarmed skills, simultaneous strategic moves from numbers 1 to 15); Martial music; Sports games and exercises to develop physical strength; Review, Test, Evaluate.

After applying the new Vovinam program content, physical training results have increased. The results of the experimental group's physical fitness development allowed us to confirm that the program content selected and applied by the study had practical value, initially contributing to improving the general physical fitness of the school's students.

The results of assessing the growth rate of male and female students in the experimental group were higher than the male and female students in the control group and had a statistical significance of P=0.05. This once again proves that the program content proposed and applied by the project has a positive and effective impact on the physical development of research subjects.

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