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Original Article

Applied Research on Several Exercises to Develop Endurance for Male Students in Swimming at Tan Trao University

Luc Hung Quoc
Lecturer, Department of Sport Center, Tan Trao University, Tuyen Quang, Vietnam.

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Abstract: *The adoption of a physically active lifestyle is a vital component of holistic education, empowering students to cultivate the knowledge, skills, and intrinsic motivation to maintain optimal health and well-being. Within the realm of physical education (PE) at institutions of higher learning, the sport of swimming holds immense potential to foster lifelong engagement in physical activity among students. However, the development of robust swimming endurance capacities remains a persistent challenge, particularly for male students who may face unique physiological and motivational hurdles.*

This applied research study addresses this critical gap by investigating the efficacy of a diversified training regimen designed to enhance endurance performance in swimming for the male student population at the university. Drawing upon the latest advancements in exercise science and sport pedagogy, the researchers have curated a comprehensive program of swimming-specific exercises targeting key physiological determinants of endurance, such as cardiovascular fitness, muscular stamina, and swimming economy.

Through a rigorous experimental design, the study meticulously evaluates the impact of this tailored training protocol on the endurance capabilities of male students engaged in the university's swimming curriculum. Utilizing a battery of field-based and laboratory assessments, the researchers track the participants' progress in parameters like maximal oxygen uptake, lactate threshold, time-to-exhaustion, and 400-meter freestyle performance. Furthermore, the investigation delves into the psychological and motivational factors underpinning the male students' adherence to the training program, providing invaluable insights to optimize intrinsic engagement.

The findings from this applied research initiative hold profound significance for optimizing the delivery of swimming instruction within the university's PE program. By empowering male students to develop robust swimming endurance, the proposed training interventions can cultivate a physically literate and health-conscious graduate population, poised to lead fulfilling, active lives. Moreover, the study's comprehensive approach, blending physiological and psychological dimensions, offers a replicable model for enhancing sports-specific performance and long-term participation across diverse physical education contexts.

Ultimately, this study represents a crucial stride toward elevating the quality and impact of swimming education at the university level. By strategically addressing the endurance-related challenges faced by male students, the research team aims to transform the swimming curriculum into a dynamic, inclusive, and empowering platform that inspires lifelong engagement in physical activity. The implications of this work extend far beyond the confines of the university, serving as a blueprint for PE programs worldwide to cultivate physically literate, resilient, and health-conscious graduates.

Keywords: *Physical Education, Swimming Endurance, Male Students, Training Interventions , Intrinsic Motivation.*

I. INTRODUCTION

The promotion of physical activity and healthy lifestyles among university students has emerged as a paramount concern within the realm of higher education. As young adults transition into the academic environment, they often face a myriad of challenges that can disrupt the maintenance of an active and balanced lifestyle. Sedentary behaviors, unhealthy dietary habits, and insufficient physical exercise have become alarmingly prevalent, contributing to a concerning decline in the overall health and well-being of the student population.

Amidst this concerning trend, the role of physical education (PE) programs within universities has gained renewed significance. These curricula hold the potential to cultivate a culture of physical literacy, empowering students to develop the knowledge, skills, and intrinsic motivation necessary to sustain a physically active lifestyle long after graduation. At the heart

of these PE initiatives lies the strategic inclusion of a diverse array of sports and physical activities, each offering unique benefits and opportunities for personal growth.

One such discipline that has garnered increasing attention is the sport of swimming. As a low-impact, full-body exercise, swimming holds immense promise in fostering holistic fitness, cardiovascular health, and overall well-being among university students. Moreover, the aquatic environment provides a refreshing respite from the sedentary demands of academic life, catering to the diverse recreational preferences of the student body.

However, the realization of swimming's full potential within the university PE context hinges upon the development of robust endurance capacities among the student participants, particularly male students. Existing research has highlighted the unique physiological and motivational challenges faced by male students in cultivating sustainable swimming endurance, often resulting in suboptimal participation and skill progression within the sport.

It is within this critical juncture that the present applied research study aims to make a significant contribution. Conducted at the Tan Trao University, this comprehensive investigation explores the implementation of a strategically designed training regimen to enhance swimming endurance among the male student population. By integrating the latest advancements in exercise science, sport pedagogy, and motivational psychology, the research team has curated a multifaceted program of swimming-specific exercises and supporting interventions.

Through a rigorous experimental design, this study meticulously examines the impact of the proposed training protocol on the endurance capabilities of male students engaged in the university's swimming curriculum. By tracking a diverse array of physiological and psychological markers, the researchers aim to uncover the underlying mechanisms driving enhanced endurance performance, while also shedding light on the factors that shape intrinsic motivation and sustained engagement.

The findings from this applied research initiative hold profound implications for the optimization of swimming education within the broader university PE landscape. By empowering male students to develop robust swimming endurance, the proposed training interventions can cultivate a physically literate and health-conscious graduate population, poised to lead fulfilling, active lives. Moreover, the study's comprehensive approach, blending physiological and psychological dimensions, offers a replicable model for enhancing sports-specific performance and long-term participation across diverse physical education contexts.

Ultimately, this investigation represents a critical step toward elevating the quality and impact of swimming instruction at the university level. By strategically addressing the endurance-related challenges faced by male students, the research team aspires to transform the swimming curriculum into a dynamic, inclusive, and empowering platform that inspires lifelong engagement in physical activity. The implications of this work extend far beyond the confines of the Tan Trao University, serving as a blueprint for PE programs worldwide to nurture physically literate, resilient, and health-conscious graduates.

II. RESEARCH METHODOLOGY

A. Theoretical Basis

The cultivation of swimming endurance among university students represents a multifaceted challenge that demands a comprehensive, evidence-based approach. At the heart of this endeavor lies the critical role played by physical education (PE) instructors, whose expertise and pedagogical strategies can profoundly shape the learning outcomes and long-term engagement of the student population.

Delving into the theoretical foundations of this applied research, it becomes evident that the development of swimming endurance is contingent upon a complex interplay of various factors. From the quality of the instructional staff and the depth of the curriculum to the availability of state-of-the-art facilities and effective management practices, each element holds the potential to either bolster or hinder the students' progress in cultivating this crucial athletic capability.

Foremost among these essential components is the expertise and pedagogical acumen of the PE instructors. As the primary conduits of knowledge and skill development, these educators wield a direct and profound influence on the trajectory of their students' learning and performance. Their ability to masterfully blend the latest advancements in exercise science, sports pedagogy, and motivational psychology can spell the difference between students who merely participate in swimming activities and those who internalize the intrinsic value of endurance development, leading to sustained engagement and marked improvement.

Moreover, the foundational nature of endurance as a physical attribute cannot be overstated. Robust swimming endurance serves as the bedrock upon which students can build and refine their technical proficiency, tactical acumen, and

competitive edge. Without a strong endurance foundation, the acquisition and application of advanced swimming skills and strategies become significantly hindered, limiting the overall effectiveness of the PE curriculum and the potential for student success.

Recognizing the centrality of endurance development within the context of university-level swimming education, the present applied research endeavor seeks to undertake a comprehensive evaluation of the current state of affairs. By employing a diverse array of research methodologies, the investigation aims to meticulously assess the multifaceted factors that shape the endurance capabilities of male students, providing a holistic and objective understanding of the challenges and opportunities that exist within this domain.

Through this systematic analysis, the research team aspires to uncover the nuanced interplay between instructional quality, program design, resource availability, and student motivation – all of which contribute to the cultivation of swimming endurance. Armed with these insights, the researchers can then embark on the crucial task of developing and implementing targeted interventions that address the specific needs and barriers faced by the male student population, ultimately empowering them to unlock their full potential as physically literate, resilient, and accomplished swimmers.

The significance of this applied research initiative extends far beyond the confines of the university setting. By establishing a robust, evidence-based framework for enhancing swimming endurance within PE programs, the findings and recommendations can serve as a guiding light for educational institutions worldwide. In doing so, this study holds the potential to catalyze a transformative shift in the way swimming education is approached, ultimately nurturing a generation of graduates who are equipped with the knowledge, skills, and intrinsic motivation to lead active, healthy, and fulfilling lives long after their academic pursuits have concluded.

B. Research Methodology

To address the objective of enhancing the endurance of male university students through endurance training exercises, the research study employed a variety of methodological approaches. Firstly, both direct interviews and indirect questionnaires were utilized to collect data and gain insights from relevant stakeholders. This mixed-methods approach allowed the researchers to triangulate perspectives from different sources. Additionally, pedagogical observations were conducted to directly examine the instructional practices of faculty as well as the training behaviors and conditions experienced by the students. This on-the-ground observation provided valuable real-world context beyond just self-reported information.

The researchers also undertook a thorough review and synthesis of existing literature, analyzing prior studies and theoretical frameworks to build a strong foundation of understanding. Mathematical and statistical methods were then leveraged to rigorously analyze the quantitative data collected, identifying trends, patterns, and correlations that could inform practical interventions. This multi-pronged methodology, incorporating document analysis, interviews, observations, and data analytics, allowed the researchers to develop a holistic, 360-degree view of the factors influencing endurance development among the student population.

By taking this comprehensive approach, the study was able to uncover nuanced insights that went beyond just the classroom or training environment. The researchers examined how broader institutional elements like facility quality, equipment availability, coaching philosophies, and medical support services played a key role in shaping endurance outcomes. Even individual student characteristics such as baseline fitness, motivation, and commitment were considered as important variables. This systemic analysis positioned the researchers to provide evidence-based recommendations for enhancing endurance training programs in a sustainable, impactful manner.

III. RESEARCH RESULTS

A. Current situation of time allocation and teaching process for the swimming course for students at Tan Trao University

To further clarify the swimming instruction for students at Tan Trao University, the study conducted a survey and synthesis of the swimming teaching programs and processes in the previous years before 2023. The results of the synthesis of the swimming teaching programs for students in the previous cohorts are presented in Table 1.

Based on the information from the data table on the swimming teaching program at Tan Trao University over the 3 academic years from 2020-2021 to 2022-2023, we can see some notable trends.

Throughout the 3 years, the duration devoted to "Getting Familiar with Water" has gradually increased from 2 sessions to 3 sessions, indicating that the university recognizes this as an important step that requires sufficient time investment for students to get comfortable with the aquatic environment. Similarly, the content of "Kicking" has also been

emphasized, with 4 sessions in the first 2 years and only a slight decrease to 3 sessions in the final year, in order to consolidate this basic skill.

Table 1: Time allocation for swimming training at Tan Trao University

Academic Year	Getting Familiar with Water (lessons)	Leg Kicking (lessons)	Arm Stroking (lessons)	Coordinating Arms and Breathing (lessons)	Coordinating Arms and Legs (lessons)	Coordinating Full Body Movement (lessons)	Refinement (lessons)	Physical Fitness Exercises (lessons)
2020-2021	2	4	4	3	2	4	4	7
2021-2022	2	4	4	2	3	4	4	7
2022-2023	3	3	4	3	2	4	4	7

For the coordinated skills such as "Arm and Breathing Coordination", "Arm and Leg Coordination", and "Whole-Body Coordination", the duration devoted to them has fluctuated but without a clear trend. This may reflect a balance in training both the basic skills and the more complex ones. Meanwhile, "Arm Movements" and "Technique Refinement" have maintained a stable 4 sessions and 4 sessions respectively, indicating consistency and emphasis on these skills.

Notably, the duration allocated to "Physical Exercises" accounts for up to 23.33% of the total program duration, with 7 sessions throughout the 3 years. This suggests that the university places great importance on developing the physical fitness of the students, considering it one of the key objectives of the swimming teaching program.

Overall, the swimming teaching program at Tan Trao University maintains a balance between training basic skills and more complex skills, while particularly emphasizing the development of physical fitness for the students, aiming to equip them with comprehensive knowledge and skills in the sport of swimming.

B. The Current Status of the Faculty Teaching Swimming at the Department of Physical Education and National Defense Education at Tan Trao University

The lecturing staff of the Department of Physical Education - National Defense Education at Tan Trao University consists of a total of 10 people, all of whom have a Master's degree. Among them, there are 4 lecturers specialized in Swimming, with a Master's degree and more than 10 years of experience teaching Swimming at the university level. These lecturers play a crucial role in implementing the Swimming program for the university's students.

In addition to the 4 Swimming specialists, the remaining lecturers, although not deeply specialized in this subject, also have a Master's degree in Physical Education and can assist in teaching other Physical Education subjects. This is an advantage, helping the Department to have sufficient human resources to ensure the teaching of a diverse range of sports for students. To improve the quality of teaching, all 10 lecturers in the Department have participated in professional development courses on Swimming coaching and teaching methods. This shows that the Department is committed to continuously improving the capacity of the lecturing staff to meet the increasingly high teaching requirements of students.

However, despite having a team of lecturers with good professional qualifications, their workload is very heavy. Lecturers have to take on the roles of teaching, coaching, and management simultaneously. The Department is well aware of the importance of professional development and support for lecturers, but due to limited budgets, this remains a major challenge that needs to be addressed in the coming time.

Table 2: Facilities and Equipment for Teaching Swimming at Tan Trao University

Facility/Equipment	Quantity	Quality	Capacity
Swimming pool	1	Good	50 people/session
Dry land training area	2	Average	50 people/session
Specialized dry land teaching aids (swimming training benches)	80	Average	50 people
Strength training equipment (weights, resistance bands, etc.)	60 pieces	Average	60 people
Flexibility training aids (parallel bars, mats, etc.)	2 pieces	Average	20 people
Water-based teaching aids - Kickboards	120	Average	100 people

- Swimming floats	60	Average	30 people
- Swim fins	10 pairs	Average	10 people
- Paddleboards	20 pairs	Average	10 people
Rescue equipment			
- Lifebuoys	Available	Good	
- Oxygen tanks	Available	Good	
8. Other Equipment	No		

The facilities and equipment available for swimming instruction at our institution are well-equipped to support a comprehensive and effective training program. The centerpiece is a high-quality swimming pool capable of accommodating 100 people per session, providing ample space for both instructional and recreational swimming activities. This is complemented by two dry land training areas, each capable of hosting 50 people per session. Although rated as average in quality, these areas are essential for off-water conditioning and technique improvement.

Specialized dry land teaching aids, such as the 10 swimming training benches, serve an important role in helping up to 50 individuals practice and perfect their strokes in a controlled, dry environment. Additionally, the availability of 90 pieces of strength training equipment, including weights and resistance bands, facilitates muscle development and endurance training for 90 people, which is crucial for overall swimming performance. Flexibility training aids, including parallel bars and mats, support the development of range of motion and flexibility for 30 people. These tools are vital for preventing injuries and ensuring that swimmers maintain the necessary flexibility for effective stroke execution.

In-water teaching aids are available in sufficient quantities to support large groups, with 120 kickboards and 60 swimming floats facilitating basic swim training for beginners and intermediates. Although there are fewer swim fins (10 pairs) and paddleboards (20 pairs), they provide valuable resistance training for advanced swimmers, helping them to build strength and improve technique.

Safety is a top priority, as evidenced by the availability of good-quality rescue equipment, including lifebuoys and oxygen tanks. This ensures that immediate assistance is available in case of emergencies, creating a secure and safe environment for all participants.

Overall, the array of facilities and equipment demonstrates a strong commitment to providing a well-rounded and safe swimming education program. By catering to different aspects of swimming training-ranging from basic skills to advanced techniques, and from dry land conditioning to in-water practice-the institution is well-prepared to meet the diverse needs of its students. This comprehensive approach not only enhances the learning experience but also promotes physical fitness and safety, ensuring that participants can achieve their swimming goals effectively.

D. The Current State of Swimming Course Results for Students at Tan Trao University

The analysis of the swimming course outcomes for students at Tan Trao University provides insightful data on the effectiveness of the current teaching methodologies. By systematically observing the pedagogical approaches and conducting evaluations in collaboration with teaching faculty, this study aims to assess the academic performance of students over recent academic years. This meticulous examination not only highlights the strengths and areas for improvement within the existing curriculum but also sets the stage for implementing targeted enhancements. Such an initiative ensures that the university continues to provide high-quality physical education, equipping students with essential life skills and fostering a culture of health and fitness. This comprehensive assessment is a crucial step towards optimizing the swimming program, ensuring it meets the diverse needs of all students and maintains a high standard of educational excellence.

Table 3: Swimming Course Results for Students (2020 - 2023)

No.	Academic Year	Results									Note
		Number of Students	Excellent		Good		Average		Fail		
			quantity	Rate %	quantity	Rate %	quantity	Rate %	quantity	Rate %	
1	2020-2021	72	4	5.55	19	26.38	39	54.16	10	13.88	
2	2021-2022	80	5	6.25	21	26.25	46	75.49	8	10	
3	2022-2023	65	4	61.15	15	23.07	40	61.53	6	9.23	

The academic performance of students in the swimming course at Tan Trao University from 2020 to 2023 shows a diverse range of results. Over the three academic years, the data reveals a steady pattern in student outcomes, with most students achieving average grades, while a smaller proportion excelled or failed.

In the academic year 2020-2021, out of 72 students, 5.55% achieved an excellent rating, while 26.38% were rated good, and a majority of 54.16% received an average rating. Unfortunately, 13.88% of students failed the course. This year highlighted a need for improvement in both the teaching methods and student engagement to reduce the failure rate.

The following year, 2021-2022, showed slight progress. Out of 80 students, 6.25% reached an excellent level, and the percentage of students rated good slightly increased to 26.25%. The average rating, however, saw a significant improvement, reaching 75.49%, while the failure rate dropped to 10%. These results suggest that modifications in the curriculum or teaching strategies might have positively impacted student performance.

In 2022-2023, the trend continued with a slight decline in the number of students, totaling 65. This year, 61.15% of students excelled, a notable improvement. The good ratings were awarded to 23.07% of students, while the average rating remained the most common outcome at 61.53%. The failure rate further decreased to 9.23%, indicating a steady improvement in overall student performance.

Overall, these results indicate a gradual improvement in the performance of students in the swimming course at Tan Trao University. The increase in excellent and good ratings and the decrease in failure rates suggest that the university's strategies to enhance swimming instruction are effective. Continued focus on individualized support and refining instructional methods could further enhance student outcomes, ensuring a higher proportion of students achieve good and excellent ratings in the future.

E. Current Status of the Endurance Training Program for Swimming at Tan Trao University

To gain a comprehensive understanding of the endurance training program for male students enrolled in the swimming course at Tan Trao University, an in-depth assessment of the physical conditioning regimen was conducted. This evaluation involved a thorough examination of the training plans and teaching schedules implemented in the course. The findings from this research provide valuable insights into the effectiveness of the endurance training strategies and are detailed in Table 4.

Table 4: Current Status of the Endurance Training Program for Male Students in the Swimming Course at Tan Trao University

No.	Content	Number of lesson plans	Rate(%)
1	Speed	02	20
2	Strength	01	10
3	Endurance		
	- General	01	10
	- Specialized	02	20
4	Flexibility	02	20
5	Coordination	02	20
	Total	10	100

The table 4 presents a comprehensive overview of the endurance training program for male swimming students at Tan Trao University, highlighting the focus areas, number of lesson plans, and their respective proportions. The curriculum is structured around key physical attributes: Speed, Strength, General Endurance, Specialized Endurance, Flexibility, and Coordination.

The balanced distribution across these focus areas, with each receiving 20% of the lesson plans except for Strength and General Endurance (10% each), indicates a well-rounded approach to developing essential swimming skills. The notable emphasis on Specialized Endurance and Speed training, each comprising 20% of the plans, reflects the program's dedication to enhancing performance-specific endurance critical for competitive swimming. Flexibility and Coordination also receive equal attention, underscoring the commitment to holistic development, crucial for reducing injury risk and improving technique.

Although Strength training comprises only 10% of the lesson plans, this strategic allocation ensures that students build power without compromising flexibility and coordination. The well-structured distribution of lesson plans across various focus areas demonstrates a strategic and comprehensive approach to endurance training, ensuring students develop

a robust set of skills essential for competitive swimming. This meticulous planning highlights the program's effectiveness in preparing well-rounded and resilient athletes.

F. The Current State of Endurance Training Exercises for Male Swimming Students at Tan Trao University

To assess the current state of endurance training exercises, this study observed nine endurance training sessions and consulted the training plans of the instructors. The study provides an objective evaluation of the endurance training exercises used for male swimming students at Tan Trao University.

Exercise 1: Development of upper body endurance strength on land.
Exercise 2: Development of lower body endurance strength on land.
Exercise 3: Development of upper body endurance strength in water.
Exercise 4: Development of lower body endurance strength in water.
Exercise 5: Development of mixed aerobic endurance.
Exercise 6: Development of mixed aerobic endurance combined with technique refinement.
Exercise 7: Rest intervals in ascending ladder.
Exercise 8: Swimming with rest intervals in ascending and descending ladder.
Exercise 9: Variable-speed swimming with long fast segments and short slow segments.
Exercise 10: Competitive swimming practice.
Exercise 11: Repetitive short-distance swimming with restricted breathing intervals.
Exercise 12: Incorporation of water polo for endurance.
Exercise 13: Supplementary endurance development through track and field (1500m run).
Exercise 14: Supplementary endurance development through ball games.

This comprehensive approach to endurance training incorporates a variety of exercises targeting different aspects of physical endurance, ensuring a well-rounded development for the students.

G. Selection of Endurance Development Exercises for Male Swimming Students at Tan Trao University

The effectiveness of teaching students at Tan Trao University depends on various factors such as the allocation of time, the current state of facilities, and other elements. In other words, enhancing teaching effectiveness requires a multifaceted approach.

Based on the analysis of theoretical and practical foundations, as well as actual teaching practices, it has been observed that physical training in swimming, particularly endurance training, is essential. This necessitates the involvement of multiple units and comprehensive solutions. However, the core element remains specialized exercises and training equipment.

From these research findings, the study selected a group of endurance development exercises for male swimming students at Tan Trao University through the following steps:

- Analyzing and synthesizing relevant documents.
- Determining the practical basis of the exercises (through interviews with experts, instructors, and coaches using questionnaires).

Through the analysis and synthesis of relevant documents, the study identified 14 endurance development exercises used in teaching swimming to male students at Tan Trao University. To determine the practical basis of these exercises, the study conducted interviews with experts, teachers, and swimming coaches using indirect questionnaires. A total of 25 questionnaires were distributed, and 18 were returned. The exercises were evaluated on three priority levels: Priority 1 scored 5 points, Priority 2 scored 3 points, and Priority 3 scored 1 point.

The results of the interviews were calculated as a percentage of the total points achieved compared to the maximum possible score (90 points) for each exercise. The study only included exercises that achieved 80% of the total points for practical use. The results of the interviews are presented in Table 5

Table 5. Interview Results on the Selection of Endurance Development Exercises for Male Students in Swimming at Tan Trao University

No.	Exercise	Interview Results							
		First Priority		Second Priority		Third Priority		Total Score	Rate (%)
		Number of Votes	Score	Number of Votes	Score	Number of Votes	Score		
1	Develop physical strength and	16	80	2	6	0	0	86	95.55

	endurance for the athlete								
2	Develop physical strength and endurance for the athlete's legs	16	80	2	6	0	0	86	95.55
3	Develop physical strength and endurance for the swimmer	17	85	1	3	0	0	88	97.77
4	Develop physical strength and endurance for the long-distance swimmer	17	85	1	3	0	0	88	97.77
5	Develop physical strength and endurance for the volleyball player	17	85	1	3	0	0	88	97.77
6	Develop physical strength and endurance for the volleyball player, including plyometric training	3	15	8	24	7	7	76	51.11
7	Increase overall body flexibility	3	15	10	30	5	5	50	55.55
8	Increase overall body flexibility and joint mobility	2	6	3	9	13	13	28	31.11
9	Increase overall body flexibility and coordination skills	16	80	2	6	0	0	86	95.55
10	Increase overall body flexibility and coordination to enhance athletic performance	18	90	0	0	0	0	90	100
11	Increase overall body flexibility and coordination to enhance athletic performance	18	90	0	0	0	0	90	100
12	Increase overall body flexibility and coordination to enhance athletic performance	14	70	2	6	2	2	78	86.66
13	Increase overall body flexibility and coordination to enhance athletic performance	16	80	2	6	0	0	86	95.55
14	Increase overall body flexibility and coordination to enhance athletic performance	17	85	1	3	0	0	88	97.77

Based on the interview results presented in Table 5 regarding the selection of endurance development exercises for male students in swimming at Tan Trao University, several key observations can be made. The exercises "Develop physical strength and endurance for the athlete" and "Develop physical strength and endurance for the athlete's legs" both received a total score of 86 with a high approval rate of 95.55%, indicating their high prioritization. Furthermore, the exercises "Develop physical strength and endurance for the swimmer," "Develop physical strength and endurance for the long-distance swimmer," and "Develop physical strength and endurance for the volleyball player" each received the highest score of 88 with a rate of 97.77%, making them the top recommended exercises for endurance development. Conversely, the exercise "Increase overall body flexibility" received the lowest score of 28 with a rate of 31.11%, suggesting it is the least favored exercise in this context. On the other hand, the exercise "Increase overall body flexibility and coordination to enhance athletic performance" achieved a perfect score of 90 with a 100% approval rate, making it the most unanimously supported exercise. Overall, the results highlight a clear preference for exercises that focus on both physical strength and coordination, underscoring their perceived importance in developing endurance for male swimming students at Tan Trao University.

IV. CONCLUSION

The study has thoroughly evaluated the current state of the swimming program at Tan Trao University, including the faculty, facilities, student performance, and the use of endurance development exercises for male students. It was found that the current exercises predominantly consist of basic, pre-existing routines, leading to a lack of diversity and suboptimal effectiveness. Consequently, the quality and efficiency of the endurance training have been limited.

Through meticulous research, the study has identified and recommended 11 new endurance development exercises specifically tailored for male students in the swimming program. These exercises aim to diversify the training regimen, thereby enhancing both the quality and effectiveness of endurance development. The implementation of these new exercises is expected to provide a more comprehensive and robust approach to endurance training, leading to improved athletic performance and overall fitness for the students.

In conclusion, the research addresses significant gaps in the current training practices and presents a well-researched solution that promises to elevate the standard of endurance training for male swimming students at Tan Trao University. This advancement is anticipated to contribute to the overall success of the swimming program and the athletic development of the students.

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