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Strategies for improving student swimming skills using training methods and media

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Abstract

Many students find that swimming is a necessary skill, yet many struggle to learn the appropriate form due to inadequate teaching. Learning can happen faster with the right training media, and knowledge of swimming techniques can be improved. Innovative teaching methods and training media are needed to optimise students' mastery of swimming skills. This study is to assess how well proper workout regimens and media can enhance fundamental swimming skills. This study uses an action research design, where three action research cycles are (1) preparation, (2) action, (3) observation, and (4) reflection. If at least 75% of children can perform basic swim movements in a crawling style successfully, then this learning has been successful. This study used a percentage analysis methodology as its analytical method. While at least 75% of students who received a completeness score in swimming during the first cycle showed success in basic crawl style movements, the learning results of students' movements were not in accordance with the success indicators; only 55.55% of students achieved the overall target. The number of students who achieved the goal in the second cycle increased to 32 or 71.11%. At the end of the cycle, 40 students, or 88.89% of students, achieved the overall target. According to the study's findings, the basic swimming ability of adolescent students can be improved by using land exercises and training tools.

Keywords: Skills, swimming, student, methods, media.

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INTRODUCTION

Swimming is a vital life skill that has numerous advantages for mental and physical health, particularly for students who frequently face

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stress related to their studies (Papadimitriou & Loupos, 2021). These abilities are also the cornerstone of many useful and safe aquatic activities. Still, many students in different higher education institutions need help to become proficient swimmers. Numerous things, such as the shortcomings of traditional teaching techniques and a lack of access to suitable training facilities, can contribute to this (Abu Eid et al., 2023).

In order to develop complicated motor abilities like swimming, traditional teaching approaches that just emphasise verbal instruction and demonstration without integrating students' active participation are frequently inadequate. Conversely, it has been demonstrated that more interactive learning strategies, like practice-based learning and the use of assistive media, are more successful (Erduran et al., 2022). Exercise tools, including swim boards, buoys, and other visual media, can assist students in getting over their fear of the water and enhance their comprehension of fundamental and advanced swimming methods (Silva et al., 2022).

Research has also demonstrated that using interactive learning apps and motion analysis films in swimming instruction can enhance learning efficacy (Wiesener et al., 2020). Thanks to this technology, pupils can see and instantly fix the flaws in their swimming technique, which improves their learning and skill mastery (Ma, 2021). Additionally, a key factor in raising students' swimming proficiency is the program's structured approach, which incorporates a range of workouts and modifications based on each student's ability. According to Rezki et al. (2019), the integration of inventive pedagogical approaches and appropriate supplementary materials will yield a more comprehensive educational encounter, encourage greater student participation, and expedite the acquisition of new skills. The creation of learning environments that are encouraging and sensitive to the requirements of students requires the development of strategies that incorporate a variety of techniques and media. It is envisaged that by using this method, kids will be able to

acquire swimming skills more quickly and will feel more confident while engaging in other water-related activities (Erduran et al., 2022).

The challenges university students face in developing their swimming abilities often arise from various factors that hinder their ability to learn swimming techniques efficiently. Common problems include a lack of confidence, limited access to adequate facilities, insufficient physical preparation, ineffective teaching methods, and a lack of motivation and consistency in practice. Students frequently experience difficulties learning to swim in the crawl manner due to various variables, including poor technique, inadequate physical circumstances, and learning materials. Numerous studies demonstrate that college students frequently struggle to learn essential crawl skills like breathing, arm movements, and hand-leg coordination. Usually, this results from a lack of conceptual knowledge and little real-world experience. This problem can be solved by utilising a variety of teaching strategies, including pull buoys, live feedback, and video instructions. Pupils frequently need help with coordination of crawl style and breathing approaches. Having assistance keeping a steady body posture and synchronising hand and foot movements with breathing are common errors. Students can better grasp the method visually with the use of video tutorials, and they can make faster and more effective modifications with direct feedback from the instructor. According to Crowley et al. (2017), this study demonstrates how learning complex procedures can be accelerated using visual media and direct instruction.

Additionally, studies have demonstrated that pupils' physical health, particularly their flexibility and strength in the core muscles, greatly impacts how well they acquire crawl techniques. Pupils who need to be in better physical shape tend to tire out faster and struggle to swim sessions with proper technique. The significance of core muscle strength and flexibility in a crawl manner is emphasized. The body's stability when swimming is influenced by the strength of the core muscles, while the ease of movement of the arms and legs is determined by flexibility. Stronger core muscles are associated with improved posture and less energy loss

in college swimmers. Students' crawling ability can be improved, and injuries can be avoided with regular strength and flexibility workouts (Khiyami et al., 2022).

When teaching crawl styles, emphasize the value of utilising a variety of teaching techniques. Pull buoys and kickboards are two tools that can assist pupils in concentrating on particular parts of swimming technique, such as body position or leg movements. Precisely designed activities that incorporate many tools and methods can assist students in developing their skills more fully. Students can make substantial progress and study more effectively with integrated strategies (Anderson & Taner, 2023).

Based on an observation of the significance of strategies to enhance students' swimming abilities, it was found that the use of training media, the need for more specialised training techniques, and the efficacy of training methods are the primary issues facing the area. Using technology and other media judiciously, along with various training methods, is essential to helping kids develop their swimming skills. Training tactics must be regularly evaluated and adjusted to get the best results.

As an alternative, this study will offer techniques and supporting materials to help students' crawl-style swimming abilities. The training method uses learning tools like skateboards, fins, and pulboys, as well as land activities. According to Subekti (2021), land training is a type of exercise that is done on land and mimics swimming movements. It is beneficial for enhancing the dominating physical condition in swimming sports. Strengthening and conditioning to improve the strength, flexibility, and mobility needed to learn swimming is the aim of this activity. Although this exercise is done on land, the movements are similar to those done swimming. Some of the movements are performed swimming on a box, which allows the participant to continue swimming while strengthening the essential physical attributes for swimming sports and potentially maximizing benefits. Training or learning media is an additional strategy utilized in addition to ground training (Jastradaf & Asriningtias, 2023). Learning media is one tool employed in the learning process to stimulate

pupils. Beginner-specific training media, including skateboards, fins, and pulboys, are used. Using assistive devices has several benefits, such as boosting training frequency, supporting a streamlined body, and accelerating the mastery of movements because they can enhance each movement (Permana, 2016).

METHOD

This research uses action research to improve the learning situation so that there is an improvement in the quality of learning (Sugiyono, 2022). The central idea of this research is that the person who will take action must also be involved in the research process from the beginning. Thus, they can not only realize the need to carry out a specific action program but will be physically involved in the action program. This study refers to the Kemmis & Mc Taggart Spiral Model, where there are four important stages in classroom action research, namely (1) planning, (2) action, (3) observation, and (4) reflection. These stages can be seen in Figure 1. At this stage, two components cannot be separated, namely action and observation. This is because both must be done in one unit of time. This research was carried out in three cycles.

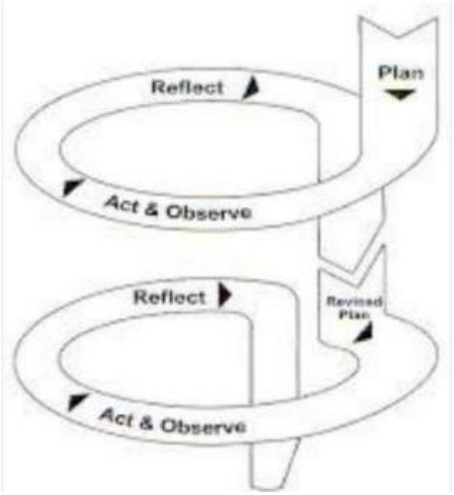

Figure 1. Model Action Research

The approach provided uses land exercises that are adapted to crawl-style swimming skills and the use of training media (skateboards, fins, pulboys). The subjects involved in this study were 45 adolescent

students. The subject recruitment technique used purposive sampling, with the consideration of students who were programming swimming courses, did not have injuries or trauma during swimming, and were willing to participate in the activity until it was complete. The success of this learning is measured by a minimum of 75% of the number of students achieving success in basic movements of crawl-style swimming. Data analysis techniques use quantitative and qualitative methods. The instrument in this study is the data of a swimming ability test with a crawling style with a distance of 25 meters. The learning process data was obtained through observation by looking at the percentage of success from the results of the crawl-style swimming ability test. The research subjects involved were 45 novice students. The data analysis used to discuss the research findings is by descriptive percentage. This depicts the success of the instrument, which uses the 75% criterion as the completeness of learning. The tool used to process research data is Microsoft Excel.

RESULT

The following is the data from the results of action analysis through 3 cycles carried out in implementing action research in applying land training and training media to improve basic swimming skills. Based on the results starting from pre-cycle to cycle III, the average results of the increase in movement learning in students were obtained as follows:

Table 1. Percentage increase in the results of land training and exercise media to improve basic swimming skills in students

No.	Cycle	Number of students completed in learning	Percentage
1	Cycle 1	25	55,55%
2	Cycle 2	32	71,11%
3	Cycle 3	40	88,89%

Based on the research conducted, from pre-cycle to cycle III, the average result of increasing movement learning is obtained, as shown in Figure 2. Figure 2 shows that in the first cycle, the results of student movement learning have yet to be in accordance with the success indicators. The results obtained were only 55.55%, with a total of 25 students who managed to achieve the target. In the second cycle, the

success increased to 32 students, achieving the target with a percentage of 71.11%. Based on these results, it is concluded that in the second cycle, it cannot be said that it has been successful because the achievement is still below 75%. At the end of the cycle, there was a significant increase, with 40 students achieving the target with a percentage of 88.89%.

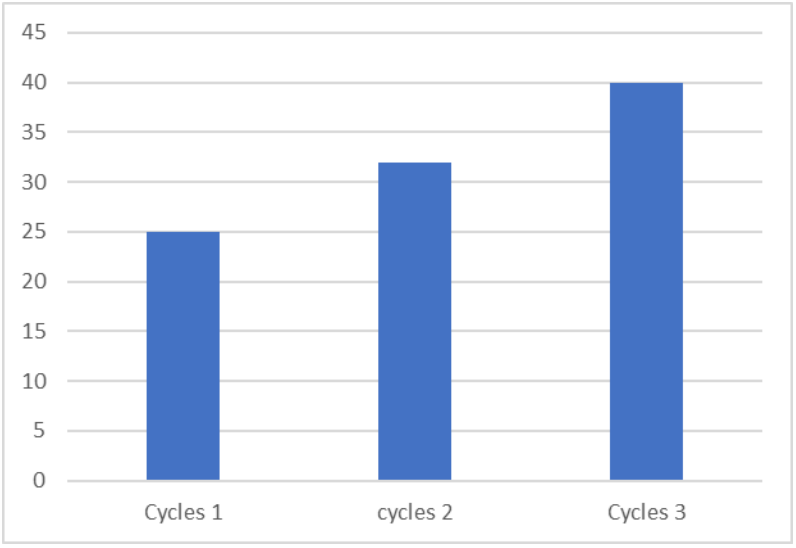

Figure 2. Increase in the average value of movement skills by cycle

The action was carried out in 3 cycles with 3 meetings each in the application of land training and training media to improve basic swimming skills by starting at the planning stage, namely the creation of an action implementation plan in which the actions that the researcher will take are reflected, namely by making land training methods and training media. The second stage is the provision of action for 3 meetings. The next stage is observation, followed by reflection on the results and using the ability to swim in a crawl style with a predetermined distance of 25 meters. Based on the evaluation of the results of land training and training media, it can be seen that it has achieved the minimum classical success indicator, students who have completed their studies have reached more than the minimum achievement standard of 75% of the total number of students.

DISCUSSION

It has achieved success indicators with the percentage of students who have completed their studies reaching more than the achievement standard of at least 75% of the total number of students, based on the findings of the research results, techniques, and media. The achievements seen in cycles I and II can still be said to be in the poor category. Based on observations, students are still adapting to the flexibility and basic movements of swimming that are different from their branches. Another factor can also be seen in some students who have trauma to the water, so the increase in their movement development is not able to develop according to the target. Some of these results are clearly visible based on observations and notes made during the research process. The entire training session was recorded, which focused on observation and reflection of the cycle. This is intended so that reflection can be carried out appropriately. The completion of training sessions, both land training and water training using assistive devices, was neatly recorded. The recorded events start from ideas, personal impressions, student impressions, and important notes that occurred during the training session.

In the first cycle, students tend to pay less attention to explaining the basic movements of swimming, crawl style, and the use of exercise media. The results of several studies also show similar things regarding the need for preparation, equipment, and readiness to receive material explanations (Jastradaf & Asriningtias, 2023; Rezki et al., 2019). This cycle did not show any improvement from either land training or water training using assistive devices. Providing the basis of movement in land exercises is still challenging for students. Some stretches cannot be done correctly because students must be more flexible. Mobility difficulties are seen in leg movements requiring straight movement from the groin and ankle. The treatment carried out is to do a kicking movement from the knee so that the knee and ankle are bent.

Another problem is also seen in water training when using buoy media and pulbouys. Using swim boards can increase interest in learning

so that students do exercises while learning to improve freestyle swimming learning outcomes (Wijaya et al., 2022). The use of a combination of pullboy and swimboard can increase learning outcomes by 44.58% in terms of skills and 41.03% in freestyle knowledge aspects (Rodríguez González et al., 2023; Takagi et al., 2023). Swimboards can improve psychomotor skills by providing buoyancy during basic freestyle leg movement exercises. In addition, it can be used to train students in breath movements (Sin & Hudayani, 2020).

Based on the results of reflection in cycle 1, cycle 2 learning is carried out with an emphasis on the burden of land exercises being prioritized. It is hoped that students can be more flexible and that they will be used to the existing movements when doing water exercises. Methods and auxiliary media are in the form of approaches given using land training and the use of training auxiliary media (skateboards, fins, pulboys). In cycles 1 and 2, there was an increase in ability, but the success was insignificant. Some emphasis is placed on the ankles, leg movements from the groin, and also arm movements at the shoulder joints. The difference can be seen in the mental readiness of students when receiving material and when practicing in the water. Media use has become easier because of the reduction of fear when swimming. Adding assistive devices to the fin is also done to facilitate leg training.

The results of testing on students in this cycle have increased. Students' enthusiasm to pay attention and make movements correctly greatly influences the results of the second cycle test. Students can already enjoy moving in the water, which can be seen from the rhythm of movement when crawl-style swimming. The lack of success in this cycle can be seen in the students' breathing techniques, which are still too rigid. Swimming training media are crucial for the enhancement of endurance, muscle, and technique in both novice and seasoned athletes. Swimmers can enhance their performance and efficiency in the water by utilising the appropriate media to strengthen the necessary muscles and improve their fundamental techniques (Hendi & Priyanto, 2023). The utilisation of

appropriate swimming aides can expedite the learning process and substantially enhance the performance of swimmers. These instruments are instrumental in the enhancement of technique and the development of muscle strength, endurance, and body coordination, which are essential for achieving optimal swimming performance.

Based on the results of the implementation of the second cycle of reflection, the third cycle was designed with an emphasis on improving breathing skills and coordination of crawl-style swimming. In this cycle, the provision of exercise is more emphasized in water exercises with the use of fin media. The stiffness of movement in the legs and arms has been significantly reduced. Confusion is done on movement coordination, especially when doing breathing movements. The average student takes a breath late so that the time to take a breath is only a few and less. In addition, the way students breathe in water is not right because they are afraid to do breathing movements. The utilisation of swimming training aids provides numerous benefits.

However, it must be cautiously approached in the context of a more comprehensive training regimen. Swimming assistive devices, including swim boards, pull buoys, fins, snorkels, hand paddles, and resistance devices, are intended to enhance endurance, strengthen muscles, assist swimmers in the development of more efficient strokes, and remedy errors in strokes (Feri Apriani et al., 2023). Media can concentrate on specific aspects of swimming techniques that may be challenging to develop without additional assistance. The benefits can be maximized while the risks are minimized by combining the use of aides with the guidance of experienced trainers (Rodríguez González et al., 2023). Media can be employed to enhance swimmers' strengths, better their weaknesses, and prepare them for more significant challenges in competition.

The results in cycle III as a whole showed a significant increase in the swimming skills of the student crawl style. This research certainly could have run smoothly, but there were several obstacles. The correlation between resources and infrastructure to support the exercise is very

appropriate (Amaro et al., 2017; Verrelli et al., 2021). Some additional factors that can be seen to affect the learning outcomes of crawl swimming skills are the level of understanding, anxiety, attendance, self-discipline, time management, and delivery of the teacher's explanation (Moriyama et al., 2022; Petrigna et al., 2022; Rezki et al., 2022). Based on the open questionnaire, most students responded positively to learning to swim through land and water exercises using assistive devices. This model is good and easy to follow according to the student's efforts, can motivate students to participate in learning activities, and educates students to be more disciplined.

CONCLUSION

Based on research, engineering, and media findings, the percentage of students who have finished their studies has surpassed the achievement standard of at least 75% of the total number of students. Using various instructional strategies and instructional materials, including video tutorials, can greatly enhance pupils' swimming abilities. Swimmers can make quantifiable development using appropriate tools and well-organized training regimens. The effectiveness of using media and training techniques highlights the need for a more comprehensive and integrated approach to training program design. A range of techniques and resources should be incorporated into the practice program to address students' technical, physical, and psychological needs. This achievement implies that the training program has to be modified in light of participant feedback and evaluation findings. Programs should be adaptable enough to consider users' unique demands and advancements.

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