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The effect of water exercises on learning to swim breaststroke and acquiring some sensory-motor abilities for disabled youth of the S10-S9 category

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Abstract

There is an increasing interest in countries around the world in providing opportunities for growth and education for people with disabilities. Education and learning are among the basic rights of all segments of society, whether they are normal or disabled, as these people with disabilities are considered disabled human energies if they do not receive appropriate care and attention. People with disabilities of the S10-S9 category have the ability to learn, but in a way that is specific and appropriate for them. Through the researcher's visits and numerous meetings to institutes and centers concerned with educating people with disabilities of the S10-S9 category, they noticed that those in charge and concerned avoid the water environment in the process of their education and training for this category in particular. Among the juniors, the researcher also noted the lack of sports studies dealing with disabled people in the S10-S9 category, and this reinforces the need to conduct this study. The research aimed to identify the effect of water exercises on learning breaststroke swimming and acquiring some sensory-motor abilities for disabled youth in the S10-S9 category, aged (13-14) years. The researcher used the experimental method with one experimental group to suit the nature of the research, and the research population was determined from the emerging disabled individuals of the S10-S9 category registered at the Baghdad Center for the disabled in the year (2016), and they numbered (20) male labs. A sample was taken from them intentionally, as their number reached (6). The small number of sample members is due to the parents' lack of consent for their children to practice water exercises and swimming, and the ages were determined to be between (13-14) years, and in the S10-S9 category, according to the classification approved by Before the Ministry of Labor and Social Affairs based on the classification of the American Association, and they had not practiced swimming before. The researcher concluded that it is possible and easy to use water exercises with disabled people in the S10-S9 category, aged 13-14 years. The use of water exercises has a positive effect on learning breaststroke swimming and improves the acquisition of sensory-motor abilities for disabled people of the S10-S9 category aged (13-14) years.

Keywords: Water exercises, swim breaststroke, sensory-motor abilities, disabled

1. Introduction

Based on the idea that everyone should have equal access to education and learning opportunities, as well as what their physical and mental capacities allow, societies are now becoming more interested in those with special needs. Nowadays, training, education, and learning initiatives are targeted at all people, regardless of age, and are no more only for the average person. Every individual, normal or abnormal, may learn, but in various ways, just as they have the capacity to mature and grow, but at different rates and levels. This is due to their mental and physical capacities, as well as their absorptive and mental levels.

Water exercises are one of the modern and important exercises for learning and training, in which the water environment is a means of movement, through movements of the arms, legs, and torso, with the aim of improving the individual's physical, skill, mental, psychological, and social efficiency. (Rateb, 1999, p. 22) ^[4], where water exercises are practiced from Before both sexes, and at different ages, according to their capabilities and capabilities, water exercises differ from other sporting activities, as the water environment in them is the basis for progress through the use of the arms, legs, and torso. On the other hand, it represents the individual's

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ability to interact with the water environment, which is completely different from the environment. The land on which he lives.

Additionally, sports for the disabled (S10-S9) have evolved into a normal human phenomena that calls for a very positive response. Since they are human beings with rights to a normal life, they should receive greater care and attention in their upbringing, education, rehabilitation, and overall transformation from being a useless, disposable energy source to a productive force capable of adapting to life's demands, practicing self-reliance, living a daily life, and finding a suitable career within the parameters of their physical capabilities. (Page 14 of Yahya and Obaid, 2005) [8]

People with disabilities benefit greatly from physical education, and if we give S10-S9 individuals below-the-knee amputations activities that allow them to use their senses, muscles, and limbs to walk, run, and jump, then their degree of dependence and self-confidence will grow. We also need to take care of the physical, motor, psychological, and social capabilities of these individuals. This improves their chances of assimilating and adapting into society while lessening the impacts of impairment. (Ibrahim, 2005, p. 253) [1]

Thus, working with the disabled, especially those in the S10-S9 category, has become a humanitarian and social issue and a national duty. Through the above, the researchers sought to develop water exercises for this group to teach swimming, and an attempt to bring them closer to their equality with normal people, in a way that suits their mental abilities and physical ability.

The importance of this research lies in these disabled people learning to swim breaststroke and acquiring sensory-motor abilities.

Hence, the researcher felt it necessary to conduct this study, hoping that the results of this study would contribute to filling a part, even if it was small, in completing and developing the work of institutes and centers concerned with the disabled, category S10-S9.

1.1 Research Problem

Countries around the world have become increasingly interested in providing growth and education opportunities for the disabled. Education and learning are among the basic rights of all segments of society, whether they are normal or disabled. These disabled people are considered idle human energy if they do not receive appropriate care and care.

People in categories S10 through S9 who are disabled are capable of learning, but only in ways that are acceptable and particular to them. As a result, compared to typical adolescents, they require more time to learn, grow, and develop fundamental abilities. As a result, individuals require physical education courses that are tailored to their unique physical talents.

Through the researcher's visits and numerous meetings to institutes and centers concerned with educating the disabled in the S10-S9 category, they noticed that those in charge and those concerned avoided the water environment in the process of teaching and training this category, especially the juniors among them. The researcher also noticed the lack of sports studies concerned with the disabled in the S10-S9 category. This reinforces the need to conduct this study.

1.2 Research objective

1. Preparing water exercises for disabled youth in the S10-S9 category, aged (13-14) years.

2. Identifying the effect of water exercises on learning to swim breaststroke and acquiring some sensory-motor abilities for disabled youth in the S10-S9 category, aged (13-14) years.

1.3 Research hypothesis

1. Water exercises have a positive effect on learning breaststroke and acquiring some sensory-motor abilities for disabled youth in the S10-S9 category, aged (13-14) years.

1.4 Research field

1.4.1 Human field: A sample of emerging disabled people from the S10-S9 category, aged 13-14 years, at the Baghdad Center for the Disabled in Iraq.

1.4.2 Time field: From (18/5/2022) to 17/7/2022).

1.4.3 Spatial field: Swimming pool and hall, College of Physical Education and Sports Sciences - University of Baghdad.

2. Research methodology and field procedures

2.1 Research Methodology

The nature of the problem to be studied determines the research methodology, so the researcher followed the experimental approach with one experimental group to suit the nature of the research.

2.2 Research community and sample

The research community identified emerging disabled individuals from the S10-S9 category registered at the Baghdad Center for the Disabled for the year (2016), who numbered (20) male labs, according to the official records of the institute. As for the research sample, it was chosen intentionally from among them, as their number reached (6). The small number of sample members is due to the parents' lack of approval for their children to practice water exercises and swimming, and the ages were determined to be between (12-14) years, and in the S10-S9 category, according to Classification approved by the Ministry of Labor and Social Affairs based on the classification of the American Association, and they have not practiced swimming before.

2.3 Devices, tools and means of collecting information

2.3.1 Devices

1. Video camera device, for filming educational units (Sony, Digital8).
2. Samsung laptops.
3. (1) Casio electronic stopwatch.
4. Manual electronic calculator (Casio fx-82MS), number (1).

2.3.2 Tools

(Measuring tape, colored adhesive tapes to determine distances, balls of various sizes and colors, life jackets (6), life collars (6), whistle, closed swimming pool, length (50) m, width (21) m, and depth of (1-2). (Gradually, compressed foam boards (6), floats worn on the arms (for each laboratory (2)), Swedish chairs, rhythmic gymnastics hoops (6)).

2.3.3 Means of collecting information

1. Observation.
2. Tests and measurement.

2.4 Field research procedures

2.4.1 Determine the tests and measurements used in the research

Through the researcher's review of scientific sources and references that dealt with tests for learning breaststroke swimming and sensory-motor abilities, they chose a breaststroke swimming test for a distance of (10) meters and two tests of sensory-motor abilities.

2.4.2 Description of tests

First: Testing the breaststroke swimming skill for a distance of (10) meters: (Rateb, 1999, p. 285)^[4]

Test objective: Measure the skill performance of breaststroke swimming.

Test tools: Swimming pool, camera, whistle, marker for start and end points.

Description of the test: The tester stands inside the tank in the shallow area in the transverse direction of the tank, and at the moment the signal is heard, the tester pushes the wall of the tank with his leg, while performing a breaststroke swimming movement for a distance of (10) m.

Registration the test: The tester is given (3) attempts to perform the skill, and the tester is photographed from the side and back from the time he hears the start signal until the moment he reaches or touches the finish line with one of his arms, and it is presented to specialized arbitrators to determine a score out of (10).

Second: Testing the sense of time estimation: (Al-Azzawi, 2000, 38)^[14]

Purpose of the test: To measure the sense of time estimation.

Tools used: - Electronic stop watch.

Performance specifications: The tester is asked to look at the stopwatch and run it for the purpose of inspecting the watch and feeling it. Then he is asked to start it and stop it at the times (5 seconds, 7 seconds, 15 seconds), and to repeat this three times for each of these times. Then the tester is asked to perform The test is performed without looking at the stopwatch, provided that the test is performed from a standing position, looking forward, with the hand at full extension along the body. The laboratory starts the clock and stops it at a time of (7 seconds) and repeats this measurement three times in a row.

Registration: The results of the last three attempts are recorded for the laboratory at a time of (7 seconds) for each attempt separately, provided that the amount of error in each attempt is calculated by recording the time that exceeds or decreases (7 seconds).

Third: Testing the sense of distance: (Al-Saadi, 2002, p. 115)^[12] modified

Purpose of the test: To measure the sense of horizontal distance.

Tools: Blindfold, chalk, measuring tape, and a runway measuring 5 cm up and down from the target line.

Performance specifications: Two parallel lines are drawn on

the ground, the distance between them is (60.96 cm). One of them is designated as a start (start line) and the other is designated as a target (goal line). The tester stands directly behind the start line, and leaves the tester to estimate the distance of the target line from it, then blindfolds him. The experimenter is left in this position for a period of (10 seconds) and then moves his foot from the start line forward to try to reach the target line, so that it touches the second line (the target line) with the heel.

Registration: Each laboratory is given (3) attempts, and the distance that falls between the target line and the end of the laboratory's butt is recorded, rounded to the nearest (5 cm), the designated area is recorded with a rating of (zero) and the area close to it is recorded as 1, then 2, 3, 5, 4, up or down. The total distance is 25 cm after the area and 25 cm before it. The final laboratory score is calculated through the sum of the scores of the three attempts. The smaller the distance, the more it indicates the quality of sensory-motor perception of the horizontal distance.

2.4.3 Exploratory experience

The researcher conducted the exploratory experiment on 23/5/2022 in the swimming pool and hall of the College of Physical Education and Sports Sciences - University of Baghdad.

2.4.4 Pretests

Pre-tests of the research variables were conducted on (5/6/2022) and at (9) in the morning by the assistant work team and under the supervision of the researcher, after (3) introductory units had passed.

2.4.5 Educational curriculum

By referring to scientific references, the researcher prepared a set of water exercises, and the following principles were taken into account when developing them:

- Water exercises should be appropriate to the age and type of disability of the sample members.
- To the greatest extent feasible, these exercises ought to accomplish the objectives for which they were designed.
- Considering the idea that teaching skills should be graded from simple to challenging.
- Considering the idea that explanations should be repeated throughout the learning process, and that prior knowledge should be reviewed often.
- Avoid any type of corporal punishment or threats, and repeat praise and compliments during the performance.
- The curriculum included (12) educational units, with (3) educational units per week on days (Monday, Wednesday, Friday), and the time begins between (8-9.30) in the morning, and the time of each unit was (90) minutes, and each unit contains Educational on the following sections:
 - The warm-up, general exercises, minor games, showering, and swimming pool visit are all included in the preparation part.
 - The primary segment consists of (applied activity - educational activity).
 - The last segment, which consists of (brief games, unwinding, exiting the tub, and showering).
 - The procedure for implementing the educational curriculum continued for a period of (4) weeks, and the implementation of the educational curriculum began on (6/6/2022) and ended on (4/7/2022), and

the main experiment was implemented by the assistant work team and under the supervision of the researcher.

2.4.6 Posttests

After completing the application of the main experiment, the post-tests for the research variables were conducted on (6/7/2022) and at (9) in the morning by the work team, taking into account the same sequence and the same conditions in which the pre-tests were carried out.

2.5 Statistical methods

The researcher used the statistical program (SPSS) to analyze the data and extract the results.

3. Presentation, analysis and discussion of the results

3.1 Presentation and analysis of the results of the pre- and post-tests for the research variables studied

For the purpose of knowing the true differences between the pre- and post-tests for the research variables studied, the researcher used the T-Test as shown in Table (1).

Table 1: Shows the arithmetic means and standard deviations for the pre- and post-tests, the calculated and tabulated t-values, and the statistical significance of the research variables studied.

Skill	Pre-test		Post-test		(t) value Calculated	Sig level	Sig type
	Mean	Std. Deviation	Mean	Std. Deviation			
Breaststroke for a distance of (10) meters (degrees)	2.250	0.866	5.875	0.478	6.789	0.00	Sig
Sensory-motor perception of time (tha)	7.800	0.264	5.920	0.466	5.530	0.01	Sig
Sensory-motor perception of distance (cm)	15.14	1.14	11.29	1.48	10.74	0.00	Sig

The test findings for the pre- and post-test of the research variables that the sample members underwent are displayed statistically in Table 1.

The findings demonstrated that there was a significant difference between the two tests in favor of the post-test, with the arithmetic means for the variable (breaststroke skill performance) being higher in the post-test than in the pre-test. The higher the arithmetic mean for this variable, the better the level.

There was a significant difference between the two tests and in favor of the post-test because the arithmetic means for the variables (perception - motor for distance and time) had inverse values, meaning that the lower the arithmetic mean, the better the level. However, the results did not show this relationship.

3.2 Discussing the results of the pre- and post-tests of the studied variables

The researcher attributes the reason for this development to the positive impact of the educational curriculum because the curriculum items included learning the skill of breaststroke swimming and sensory-motor perception of distance and time. In the beginning, fears of the water environment were overcome, especially for disabled people of the S10-S9 type. With the help and encouragement of the assistant work team, they were able to go into the water in the shallow area, which made them feel confident and safe. They eventually gained the confidence to enter the water and circle about, and they continued to play games in which they competed with one another in the water. This is in line with what he said. (Kamil, 2002) [19] that training, repeating, and repetition are useful in the learning and performance of test subjects, and the process of repetition is very important in training and teaching disabled young people to acquire new skills and concepts.

Learning in the water environment for this category of disabled people also increased their confidence in moving safely without fear of falling or getting hurt, which helped speed up their learning of breaststroke swimming, as well as increasing their sensory-motor perception through movement and dealing with time within the vocabulary of the educational curriculum used.

Also, the diversity of exercises and the use of tools had a significant impact on the results of the variables studied, “as the use of assistive tools and the diversification of exercises contribute to increasing motivation, desire, and excitement for

the training and educational units, and the tools help improve the sample’s ability to comprehend application and learning skills.” (Muhammad (2006, p. 118) [11]

The results of the study are consistent with the results stated by (Qasim Lazam *et al.*, 2005) [17], which confirm that “educational methods help save the effort and time expended by learners and teachers and help stimulate learners’ motivation and excitement.” (Lazzam *et al.*, 2005, p. 88) [17]

The study also agrees with Kamel Taha Lewis, who states that “educational methods increase the sense of movement” and “sensory knowledge is important for developing skill and vice versa” (Al-Lewis, 1984, p. 91) [16].

In light of the results that were presented, analyzed and discussed, the researcher was able to achieve the research objectives.

4. Conclusions and Recommendations

4.1 Conclusions

- The possibility and ease of using water exercises with disabled people in the S10-S9 category aged (13-14) years.
- Water exercises have a positive effect on learning breaststroke for disabled people in the S10-S9 category aged (13-14) years.
- The use of water exercises improves the acquisition of sensory-motor abilities for disabled people of the S10-S9 category aged (13-14) years.

4.2 Recommendations

- Emphasizing reliance on water exercises prepared for the disabled in the S10-S9 category, aged 13-14 years, because of its effective impact in teaching breaststroke swimming and acquiring some sensory-motor abilities.
- Preparing specialized physical education curricula for children in particular, especially for disabled children in the S10-S9 category, and including the sport of swimming within these curricula and providing facilities for it.
- Conduct a similar study on disabled females from the S10-S9 category, and similar studies on disabled females of other types and categories.

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