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RESEARCH ARTICLE

The Effect of Using Visual Aids on Learning Some Swimming Skills Among Hearing-Impaired Individuals By

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Abstract
Purpose: Finding out the impact of an educational program in swimming using visual aids at the skill level in swimming among hearing-impaired students, the study sample included 8 students from Faculty of Physical Education and Sport Sciences whom (height 175.6/cm, Weight 77.5 /kg, Age 21.2/Year). **Methods**: the experimental approach / one experimental group, the researchers used visual aids such as displaying a model in front of the study sample in addition to displaying a video that includes teaching basic skills in swimming using illustrations. The researchers also used an educational program aimed to teach the sample members basic skills in swimming freestyle, the duration of the program is 24 educational units by 3 units per week and the time of one unit is 75 minutes, data were processed statistically using statistical packages spss to conduct the following treatments (arithmetic mean, standard deviation, correlation coefficient, and test (T) to find differences between the arithmetic averages of the pre- and post-measurements) **Results:** the P values in this stuby was (0.00*) in all tests, witch means there are statistically significant differences between the pre- and post-tests of the skill level in swimming among the sample of the study in favor of post-test. **Conclusion**: using of visual aids to teach hearing impaired persons to swim because of its great impact on the speed of learning and mastering basic skills in swimming.

Keywords
Swimming, Visual Aids, Hearing İmpairment

INTRODUCTION

Sport is no longer limited to the normal in civilized societies, but it has become necessary for disabled individuals to practice sports activity, whether in its form of entertainment, competitive or therapeutic. Sport for all, which means providing the opportunity to practice various sports activities for each individual in society according to his potential and abilities Sport is not exclusive to a segment or category in society alone, because of its positive effects that benefit the public to its practitioners, including the hearing impaired (Nawasra, 2006).

The hearing impaired is defined as "an individual who suffers from total or partial hearing loss of more than 90 decibels, which prevents him from being able to successfully process language information through the hearing device alone, whether with or without hearing aids (Al-Qaryouti, 2006).

The researchers believe that one of the most important difficulties facing the hearing impaired is the problem of adaptation resulting from their sense of inferiority and helplessness due to injury, which leads to an imbalance in their personality and a lack of emotional and emotional balance, as

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theseimbalances lead to great psychological and integrating into the society, and constitutes an obstacle to them and limits the ability to communicate with others, This may change their view of themselves and overcome them with a look of persecution, pessimism, shyness and loss of self-confidence and thus push them to isolation.

Believing in the need to integrate people with special needs and work to adapt them into society, the disabled must receive care in various fields, especially in the sports field, because of the many psychological, physical, and social benefits of sport in the rehabilitation and integration of the disabled into society. The American Red Cross (2001) states that "swimming is one of the most important sports activities programs that help the adaptation and integration of the disabled into society, which enhances his self-confidence and improves his self-concept. Also, practicing swimming and activities in the aquatic environment helps to develop the social and emotional aspects of people with disabilities, which provides an opportunity to develop communication skills and learn many motor skills (Abu Eid, 2004). Swimming is a beautiful, purposeful and useful sport, which has a great impact on the safety and health of the human being, the development of his muscles, the consistency of his body and the flexibility of his joints, swimming regulates the breathing process, activates the circulatory system, helps digestion and involves all the muscles of the body, and often helps in removing body deformities such as back curvature, leg bone curvature and rickets, hence swimming is a complete sport that is not equivalent to a sport for the growth of ideal body formation (Abu Eid, 2008).

Abu Al-Lail (2006) pointed out that the hard impaired category is one of the categories of hearing disabilities who can practice all physical and sports activities practiced by non-disabled people with the same rules of play without modification. The researchers believe that the use of aids in education has a direct impact on the learner, whether through verbal explanation, model performance, the use of models and images, or the presentation of videos, all of which lead to accelerating learning and saving effort. In order for the disabled person to absorb the movement intended to be applied, and in order for pressure that causes them difficulties in adapting the learning process to take place easily, some educational aids must be used in order to clarify the movement and communicate the idea to them so that it is realized and applied, this is because the use of aid tools to the improvement and stabilization of motor skills. This is mentioned by Al-Jaafara (2017) aimed that teaching with aid tools increase the tendency to learn for participant , and help increase the effectiveness of teaching methods, especially in motor activities, as its raiseing and increesing attention in learners..

Shatnawi and Abu Zama, (2008) study which aimed to find out the impact of visual feedback on learning some basic skills in swimming, the study sample are a group of students of the Faculty of Physical Education at Mutah University, the sample was divided into two groups: traditional group given swimming skills in the traditional way and an experimental group given swimming skills in a way visual feedback, the results of the study indicated that there are statistically significant differences between the two groups and in favor of the group that uses visual feedback.

Also, Al-Hutaibat and Bani Atta (2007) conducted a study aimed to identify the impact of both immediate and deferred feedback on learning to swim butterfly. The study sample consisted of 20 students from the Faculty of Sports at Mutah University. The sample was divided into two equal groups, one of which is the immediate feedback group and the other uses deferred feedback, an educational program for butterfly swimming was applied for 8 weeks, and the results of the study indicated that there are statistically significant differences between the two groups and in favor of the group that uses the accompanying feedback. Issa (2005) also conducted a study aimed to know the effect of accompanying and deferred feedback on learning the skill of backstroke swimming. The study sample consisted of a group of second-year students in the Faculty of Physical Education from the University of the seventh of April, and the results of the study indicated that there were no statistically significant differences between the two methods, whether giving immediate feedback or even giving deferred feedback in learning the skill of swimming crawling on the back.

The researchers reviewed the theoretical literature on the subject of the use of teaching withaid tools and their impact on learning various skills, which indicated that the teaching with aid tools contribute to facilitating the possibility of learning difficult and complex movements such as different swimming skills, and this means works to provoke learners and provoke their tendencies and desires to improve their performance, in addition to that the use of other senses during the educational process helps greatly in order to adapt and interact with the surrounding environment and society, And this is confirmed by (Shirrell, 2004) that the use of the remaining senses of the disabled is mainly one of the foundations on which they rely to gain experience and knowledge and contribute to the formation of ideas, conc epts and meanings in order to interact and communicate with the environmen Also, through participation in sports activities, including swimming, opportunities for communication between the hearing impaired and others increase, as (Abu Eid, 2008) point out that individuals who practice sports activite appropriate to them regularly and relatively intensively according to their ability and could be vital energies. They overcome the negative effects of disability, and create a positive view of society, hence the idea of this study, which is the use of some visual aid tools such as video and providing a model in addition to the use of drawings and models in teaching swimming skills to the hearing-impaired sample members in the Faculty of Physical Education and Sport Sciences.

The aim of this study is to investigate the effect of the swimming training program in which visual aids are used on the swimming skill levels of the hearing impaired students. Study Hypothesis there are statistically significant differences in the skill level in swimming between the pre- and post-tests among the members of the study sample and in favor of the post-tests.

MATERIALS AND METHODS

Study Methodology

The researchers used the experimental method which suit the nature and objective of the study.

Study population

Hearing-impaired students in the Faculty of Physical Education and Sport Sciences at the Hashemite University, numbering (8) students.

Ethical approval taken for the research and approved by the Hashemite University Human Research Ethics Committee (Approvel Nummer: (28/ 4 / 2022 / 2023)

Study sample

The sample was selected in a deliberate way, and they represent the total population of the study and their number (8) males with special needs disabled and table (1) indicates the characteristics of the sample

Table 1. Arithmetic averages, standard deviations, range and torsion of sample subjects in growth variables (n=8)

Growth variables/unit of measure	X	SD	Range	Convolution
Height (cm)	175.6	4.32	17	0.11
Weight (kg)	77.5	5.44	21	1.07
Age/Year	21.2	1.23	3	-0.34

By reviewing Table (1), we note that the sample is homogeneous in terms of torsion, where the torsion values for the length variable of the sample were (0.11), for the weight variable, the value was (1.07), and for the age variable, the torsion reached (-0.34), and these values all range between (+3 and -3), which indicates that the sample is homogeneous.

Data collection tools

First

An educational swimming program was designed to teach the sample members basic skills in swimming and mastery of freestyle swimming, after the researchers saw the specialized references and studies such as the study of Jarrar (2005), Abu Eid (2004), Rizk (2004), Elayyan (2000) and Hussein (2000). The program was presented to a group of arbitrators to determine the suitability of the program for the sample members in terms of content and time and considering the gradation in the exercises.

The program was adopted in its final form after making amendments and suggestions submitted by the arbitrators. Where the researchers benefited from it in building and designing the proposed educational program for basic skills in swimming, where they designed the program in proportion to the members of the study sample in terms of the nature of the exercises and skills that suit the nature of their disability and gradation from simple skills to the vehicle and reliance on visual feedback to the group using videosIn addition to presenting a model in front of students, and using safety factors during the presence of the sample in the pool, where they formed a set of scientific foundations that were adopted during the design of the educational program, such as:

- The content of the program should work to achieve the objectives of this study.
- The content of the program should be commensurate with the nature of the disability among the members of the study sample.
- The exercises and skills should be commensurate with the age group of the members of the study sample.
- The program should consider the individual differences between the members of the sample.
- Gradation in skills and exercises from easy to difficult.
- Gradation from simple to complex.
- Considering the factors of safety during the entry and exit betweenchanging rooms and swimming pool.
- Providing the factor of suspense, diversification, and competition among the members of the sample to banish boredom and monotony during the period of application of the program.
- The use of aid tools of assistance such as ropes, buoyancy boards and rescue pipes.

The program included in its final form three meetings a week on Sundays, Tuesdays and Thursdays, and the meeting time was 75 minutes, and the duration of the program's application was eight weeks. The program contained a set of educational units that aim to teach basic skills in swimming and mastering freestyle swimming such as (buoyancy of all kinds, slipping on the abdomen and on the back, in addition to hand movements and standing in the water, in addition to a set of small games in the water.

. In addition to displaying special videos to teach some swimming skills that are displayed to the sample during the program period as visual feedback.

Second: The skill level tests were used in swimming, after reviewing many studies such as Shatnawi and Abu Zama (2008), Hutaibat and Bani Atta (2007), Abu Eid (2004) and Elayyan (2000).

To ensure the sincerity of the tests, the researchers presented them to a group of experts and arbitrators in the field of swimming and physical education modified and unanimously agreed on the appropriateness of the tests for the study sample, where the researchers then applied and re-applied the tests to ensure the stability of the tests, and the results were as in the following table 2.

Table 2. Stability values for swimming skill level tests

No	Tests	Pearson's correlation coefficient
1	Hold breath /sec	0.87
2	Breathing timing/number	0.85
3	Slipping on the abdomen/m	0.90
4	Slip on the back/m	0.88
5	Freestyle swimming /m	0.90

By reviewing the previous table, we notice that the stability values ranged between (0.85 and 0.90) which indicates that the tests have a high degree of stability.

Exploratory study

Ethical approvals were taken from all members of the sample to join the study experiment. The researchers conducted an exploratory study so that some of the educational units included in the program were applied to a hearing impaired person other than the study sample in order to ensure the appropriateness of the proposed exercises and the best way to deal with the hearing impaired in the aquatic environment in addition to identifying the difficulties that may be an obstacle during the application of the program In the Hashemite

University swimming pool during the period 26/2/2023 until 28/2/2023.

The exploratory study included a set of exercises that the researchers will apply in the proposed program.

The survey aimed to:

4. Identify the appropriateness of the proposed exercises for the study sample.
5. Ensure the time required to apply the exercises.
6. Identify the difficulties facing the sample during the period of application of the program and try to overcome them.

Limitations of the study

1. Identify the best way to deal with hearing impaired in the water environment.
2. Ensure the validity of the tools used in the study.
3. Ensure the availability of safety factors inside the pool.

Place: Hashemite University Swimming Pool.

Time: between 5/3/2023 to 27/4/2023

Statistics

Arithmetic means, standard deviation, Pearson's correlation coefficient, and T test were used to find differences between the arithmetic averages of the pre- and post-measurements.

RESULTS

Table 3. Arithmetic mean and standard deviation in the pre-measurement of the skill level tests in swimming among the hearing impaired

No	Tests	X	SD
1	Hold breath /sec	21	1.6
2	Breathing timing/number	17	2.4
3	Slipping on the abdomen/m	1.8	0.18
4	Slip on the back/m	1.7	0.16
5	Freestyle swimming /m	2.7	0.02

The researchers calculated arithmetic averages, standard deviations in the dimensional measurement of the skill level tests in swimming, where the results indicated as in Table (4)

Table 4. Arithmetic mean and standard deviation in the dimensional measurement of the skill level tests in swimming among hearing impaired

No	Tests	X	SD
1	Hold breath /sec	45	2.7
2	Breathing timing/number	28	2.3
3	Slipping on the abdomen/m	4.55	0.14
4	Slip on the back/m	3.95	0.11
5	Freestyle swimming /m	16	0.88

To verify the results of this hypothesis, the researchers calculated arithmetic mean, standard deviation, and value (T) between pre- and post-tests, and Table (5) shows the results.

Table 5. Arithmetic mean, standard deviation and T value of participants between pre- and post-tests

Tests		X	SD	value (T)	P value
Hold breath /sec	Pre -tests	21	1.5	37.4	0.00 *
	post-tests	45	2.7		
Breathing timing/number	Pre -tests	17	1.4	38	0.00 *
	post-tests	28	2.3		
Slipping on the abdomen/m	Pre -tests	1.8	0.16	35.5	0.01 *
	post-tests	4.55	0.16		
Slip on the back/m	Pre -tests	1.7	0.15	41.7	0.00 *
	post-tests	3.95	0.14		
Freestyle swimming /m	Pre -tests	2.7	0.1	87	0.00 *
	post-tests	16	0.55		

As shown in previous table the values of (T) were a function at the level of significance α ≤0.05 between pre- and post-tests among the sample and in favor of post-tests

DISCUSSION

After statically treatment made by researchers the results shows as in table 5 , that the values of (T) were a function at the level of significance α ≤0.05 between pre- and post-tests among the sample and in favor of post-tests which indicates that the hypothesis of the study has been achieved, and this is evident through the results of the tests, which indicated a clear progress among hearing-impaired swimmers in all the skills provided to them.

The researchers attribute this progress to the natural result of performing exercise, skill and gaining practical experience during practice swimming, in addition to the skill of sensation and getting used to the water in the pool, which leads to a clear improvement in the skill level by using educational videos, drawings and illustrations and presenting a model in front of the hearing impaired as Shirrell (2004) mintions. The provision of visual feedback raises motivation in individuals to learn, as well as the correct responses are emphasized and away from the wrong performance by repeating the video presentation in front of the swimmiers with disabilities more than once, as it works to increase the element of suspense and motivation and thus consolidate the movements in the minds of the participants. Al-Khouli (2000) pointed out that the practice of physical activity may reflect on the life of the individual and develop his vital organs and give activity and vitality to his health, and this has agreed with the study of Abu Eid (2004)Which indicated a positive improvement in the skill level of the members of the study sample, as well as Marei (2004), which indicated a physical and psychological improvement for the members of the study sample after participating in a training program for swimming. Also, Rasmi (2011) which indicated a positive effect of the recreational swimming program on the psychological and physical aspects of the disabled. It also agrees with what Joanna (2001) pointed out thatthe practice of water activities works to develop many physical, psychological, and social aspects of the study sample.

Conclusions

The use of the proposed educational program in swimming has a positive impact on the learning of the study sample members' basic skills in swimming. The use of the proposed educational program using visual aid tools has a positive impact on the development of the skill level in swimming. There is a difference between the pre- and post-tests of the study sample in the tests of the skill level in swimming and in favor of the post-tests.

Recommendations

Researchers recommend using the proposed educational program to teach hearing impaired people basic skills in swimming. Researchers recommend the use of visual aid tools to teach basic skills in swimming to teach the hearing impaired.

Declaration of interest

The authors report there are no competing interests to declare**.**

Conflict of interest

No conflict of interest is declared by the authors. In addition, no financial support was received.

Ethics Committe

This study is approved by the Hashemite University Human Research Ethics Committee (Approvel Nummer: (28/ 4 / 2022 / 2023)

Authors Contribution

Study Design, FA, MH; Data Collection, FA, SA, IH, MH; Statistical Analysis, FA; Data Interpretation, SA, IH; Manuscript Preparation, FA, MH; Literature Search, FA, MH, IH,SA. All authosr have read and agreed to the published version of the manuscript.

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