

The Effect of Using Stimulus-Supported Flotation Tools on the Learning of Some Basic Swimming Skills for Blind Children

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Abstract:

This research aims at identifying the effect of using stimulus-supported flotation tools on the learning of some basic swimming skills (getting used to water – breathing – horizontal flotation on the front and recovery – horizontal float on the back and recovery–breaststroke – backstroke) for blind students (B1) classification. The researcher applied the empirical method on a sample of (10 students) with visual impairment. The research tools included: a checklist of the level of swimming basic skills performance – the suggested educational program.

The researcher used the following statistical methods: arithmetic mean – standard deviation – median – skewness - simple correlation coefficient – T test – rate of improvement%.

Key results:

1- Stimulus-supported flotation tools-based educational program has a positive impact on the level of performance of some swimming basic skills in question among blind children.

Key recommendation:

1- The necessity of using stimulus-supported flotation tools while teaching blind children the basic swimming skills.

2- Manufacturing suitable flotation tools in order to teach blind children the basic swimming skills.

Introduction and problematic:

Blind children make part of the category of children with special needs who need care and help the most. Blind subjects are born with full human competences: they can feel and get influenced by life. However, the sense of sight they had lost imposes many restrictions on them, which could have an impact on their psychological and social state. If they are neglected, this may further aggravate the problem and lead to their disability, and consequently, they'd be a

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burden for their families and society. Before being disabled, blind subjects are normal citizens who make part of the society. They have the right, like all other humans, to receive the education and learning that corresponds to their abilities and energies. They also deserve to receive more attention and care in their education and teaching so that they could have the ability to get adapted to life requirements and make their way towards the limits of their abilities.

Abdulmottleleb Ameen El-Qereety (2010) indicates that a blind child needs to practice more sports activities than a healthy one by providing him with means of entertainment and recreation and allowing him to practice sports activities that he could perform in a way that allows him to acquire many psychological and social attributes such as the ability to accept one self and to accept the society. Feeling the right directions is very important in swimming sport especially for blind subjects; a blind subject has to have a complete sense of directions and of the right path he's following inside the water. Hearing abilities play a considerable role in

determining the path of sound in a way that could help the blind subject in developing his ability to follow the changing place of the moving sound which constitutes a sort of delusional line to link between the sound and the point to which the subject should move. This also requires a good estimation of distance so the blind subject would be able to imagine the right trajectory.

When teaching totally blind subjects, they should be exposed to special experiences that depend on the use of their other remaining senses in the acquisition of educational and instructional experiences and this by providing supporting (audio and visual) educational means that can help blind subjects to acquire and understand and interact with academic subjects and get rid of fear. So, the blind subject could feel assured when getting into the water, as it's also essential to provide the blind subject with supporting tools.

Ossama Riyad (2005) adds that swimming is a highly pleasant sport for blind subjects who practice it, seen that it gives them a feeling of freshness and the freedom to

move in all direction with no fears.

Mohammed Ali (2008) indicates that educational means and supporting tools are important factors in the educational process given that they play an important role in the promotion of the teaching of swimming skills. Among the tools used in swimming we find: flotation tools, various swim rings, water-wings, kick-boards and hand paddles.

Thanks to the researcher's experience in teaching swimming to healthy and blind children, she has noticed abstention, hesitation and fear from getting into the pool among blind subjects (blind female students). Some cases even exceed to an internal psychological barrier where the child loses her prowess, initiative, boldness and courage to learn swimming skills. Those who get into the pool keep holding on to the teacher or to the side of the pool, showing no desire to move in the water or to participate actively in the performance of many basic swimming skills. So, it's necessary to handle this problem in an early stage in order to avoid its aggravation to a limit where it will be

difficult to find suitable solutions, and this by overcoming all the obstacles that hinder the educational process of blind children (blind female students in the framework of an educational program that uses stimulus-supported flotation tools, which would contribute to creating love, intimacy and confidence between the blind students and the teacher and have a positive impact on the learning of basic swimming skills that are considered as the foundation for the learning of different swimming strokes.

Research objective:

This research aims at identifying the following:

1- The impact of using stimulus-supported flotation tools on the learning of some basic swimming skills (getting used to the water – breathing – horizontal float on the front and recovery - horizontal float on the back and recovery – breaststroke – backstroke) for blind children (B1) classification.

Research hypothesis:

1- There are statistically significant differences between the pre and post tests of the subjects of the basic research sample in the learning of some basic swimming skills (in

question) in favor of the pre test.

2- There are rates of improvement in the pre test for the subjects of the basic research sample in terms of the level of performance of basic swimming skills (in question).

Research procedures:

Research methodology:

The researcher adopted the empirical method given that it suits the nature of this research, and that by following the experimental design of a single group, using pre and post tests.

Population and sample:

By means of the purposive sampling, the researcher chose a sample among the students of El-Nour School for the Blinds at Zagazig, Al-Sharqia governorate, for the academic year 2014/2015. The sample was at the number of (22) students, (B1) classification: children who cannot see light nor recognize hand shape according to medical reports in order to have the same vision acuity at the school. The researcher omitted (12) students, (9) of them as a sample for the exploratory study and (3) students for medical reasons that prevented them from practicing swimming. So, the basic research sample consisted of (10) students. The normal distribution of the individuals of the research sample was calculated in terms of some variances that could affect the

experimental variance such as: age, height, weight and intelligence.

Data collection tools:

First: Checklist of the level of performance of basic swimming skills:

The researcher designed a checklist of the level of performance of some basic swimming skills for blind children by reviewing some specialized scientific references on swimming in addition to exploring the opinions of experts. The checklist contained a set of basic swimming skills such as (getting used to the water – breathing – horizontal float on the front and recovery - horizontal float on the back and recovery – breaststroke – backstroke). Evaluation was conducted using the evaluation method: 4 principal examiners with experience in swimming, each one of them gives a mark to the blind student; afterwards the president deletes the maximum and minimum grades and calculates the mark by means of the average of both average marks.

Second: intelligence test:

The degree of intelligence of the subjects of the research sample was determined based on the reports of each student at the school. The teacher used Stanford-Binet scale (4th edition) to measure the blind subjects' intelligence.

The educational program using stimulus-supported flotation tools:

Program objective:

1- Learning some basic swimming skills (getting used to the water – breathing – horizontal float on the front and recovery - horizontal float on the back and recovery – breaststroke – backstroke) using stimulus-supported flotation tools for blind children (B1) classification.

Basis for designing the educational program:

While designing the educational program, the researcher took into consideration the following scientific basis:

- 1- Taking the program's objective into account.
- 2- Depending on the students' other remaining senses (hearing, touch, muscle sense).
- 3- Progressivity of the educational steps from easy to difficult and from simple to composed steps.
- 4- Encouraging students continuously at all levels, even low ones, and at all learning stages. Students shall not be exposed to failure experiences during the educational process.
- 5- Giving enough break periods after the performance of the skill-related trainings.

6- Providing instructions and guidelines to show the correct technical aspects of each skill so it could be corrected by the researcher.

7- Helping students during the performance of the motor task and reducing the help gradually during the instructional process till the skill could be successfully mastered without help.

8- Putting lane lines across the pool with little bells hanged on it in order to help students to overcome the fear factor, in addition to proper determination of paths and directions.

9- The program content shall be diversified, easy and simple.

10- Providing security and safety factor through the presence of (3) assistants to the researcher during the implementation of the module in the pool, so each assistant would be responsible for 2 students and the researcher for (4) students.

Educational program content:

After reviewing specialized scientific references and studies, the researcher defined the content of the educational program based on stimulus-supported flotation tools. She

was able to conclude a set of progressive trainings in terms of difficulty, which trainings were suitable for the nature of the subjects of the research sample. The number of trainings for each module was (4-7) trainings. The program contained (3) modules per week, the duration of each was (60) minutes. The program content was submitted to a group of experts in swimming field in order to verify its validity. They declared that the program was (100%) applicable on the subjects of the basic research sample.

Schedule of the educational program:

The researcher distributed the time on the contents of the module as follows:

- Number of weeks of the educational program: (8) weeks
- Number of modules: (24) modules; (3) modules per week
- The duration of each module shall be (60) minutes

Components of the daily module:

- Warm-up:
It aims at getting the blind student physically and psychologically prepared to get into the water medium by performing some warm-up and general exercises in addition to other exercises for the joints

and big muscles. The duration of this part should be (15) minutes.

- The principal part

It includes the trainings related to the learning of the basic swimming skills using audio and visual means-supported flotation tools, the duration of this part should be (40) minutes.

The final part:

It contains a set of simple recreational games that aim at relaxing the body and helping it in returning to its normal condition in addition to bringing pleasure and joy to the students in order to increase their motivation to learn how to swim. The duration of this part should be (15) minutes.

Pre tests:

Before conducting the pre tests, the researcher had taught (6) educational modules to the subjects of the basic research sample, so that all the individuals of the sample could reach a specific level starting from which the researcher would be able to conduct the pre tests and this for the period from 2/8/2015 till 18/8/2015.

Afterwards, the researcher conducted the pre tests of the subjects of the basic research sample in terms of the level of performance of the basic

swimming skills in question, on Friday 19/8/2015.

Application of the suggested program

The content of the suggested educational program (annex 5) was applied on the subjects of the basic research sample for a duration of (8) continuous weeks, for the period from 21/8/2015 till 15/10/2015.

Post tests:

The post tests of the subjects of the basic research sample

were conducted on the level of performance of the basic swimming skills under consideration on Monday 17/10/2015, following the same order and conditions of pre tests.

Presentation and discussion of results:

First: Presentation and discussion of the results of the first hypothesis:

**Table (1)
Indication of the differences between pre and post tests for the subjects of the basic research sample in terms of the level of performance of basic swimming skills for blind subjects (N=10)**

Variables	Unit of Measurement	Post test		Pre test		T value
		dependent	Independent	dependent	Independent	
Getting used to the water skill	Degree	0.90	0.51	6.00	1.16	11.69*
Breathing skill	Degree	0.70	0.54	5.40	1.11	10.17*
Horizontal float on the front and recovery skill	Degree	0.70	0.53	5.00	1.04	10.39*
Horizontal float on the back and recovery skill	Degree	0.60	0.52	4.60	1.00	10.51*
Breaststroke	Degree	0.70	0.59	5.20	1.02	9.92*
Backstroke	Degree	0.60	0.52	4.80	0.97	11.16*

T value is at 0.05 = significance level

* Statistically significant at level 0.05

As table (1) shows, there are statistically significant differences at level 0.05

between the pre and the post tests of the subjects of the basic research sample in terms of the

level of performance of basic swimming skills (getting used to the water – breathing – horizontal float on the front and recovery - horizontal float on the back and recovery – breaststroke – backstroke) in favor of the pre test.

The researcher attributes the improvement of the level of performance of basic swimming skills to the effectiveness of the content of the suggested educational program that uses stimulus-supported flotation tools (hearing – touch – muscle sense) given that it's considered as one of the important educational and instructional means that helped blind students to enjoy a complete balanced mental, psychological and social growth given that its content was linked to elements of joy, pleasure and lovely excitement. It's characterized by its simple trainings which helped students in coming over fear factor. The supporting tools led to the learning of basic swimming skills by involving the students' hearing skills and touch senses.

This result is consistent with: Young (2007), BramBring (2011) who indicate that the motor activity

of blind and disabled children can be modified and developed through an educational programmed that is prepared using supporting tools and based on the good involvement of the senses of blind children.

This result is also consistent with the results of the following studies: Ahmed Mahmud Ali (2006), Ali Abdulsamad Ali (2009), Sigal & Murphy (2010), Vincent, et., al (2014), Mohammed Abdulmoneim Ghoneim (2014), Hatem Saber Khoshano (2015), Mustafa Ibrahim Abdulkarim (2015) on the effectiveness of using the suggested educational programs on the learning and mastery of motor skills among blind children.

Furthermore, this result is consistent with the study of Bahgat Abu Tame' (2007) who indicates the importance of using supporting flotation tools in the learning of some basic swimming skills.

In this respect, Goodman & Hooper (2002) has indicated that disabilities impose some restrictions on the disabled subject. But whatever his disability may be, he can be trained to produce and become a valuable person in life.

Disability represents a challenge for him and the disabled subject's life journey should not necessarily be bad compared to that of a healthy person. So, disability creates powers that help him in realizing himself and be able to get over it by providing the disabled subject with positive guidance.

Ameen El-Kholy and Ossama Rateb (1997), Ijlal Sara (2012)

add that it's important for blind subjects to practice adjusted sports programs so that the blind child could get rid of his problems and become a freer, spontaneous and adapted child.

Thus, the validity of the first hypothesis has been established.

Second: presentation and discussion of the results of the second hypothesis

Table (2)

Rates of improvement of the post test compared to the pre test of the subjects of the basic research sample in terms of the level of performance of basic swimming skills for blind subjects

Variable	Unit of Measurement	Basic research sample N=10		
		pre	Post	Rates of improvement
Getting used to the water skill	Degree	0.90	6.00	566.67%
Breathing skill	Degree	0.70	5.40	671.43%
Horizontal float on the front and recovery skill	Degree	0.70	5.00	614.29%
Horizontal float on the back and recovery skill	Degree	0.60	4.60	666.67%
Breaststroke	Degree	0.70	5.20	642.86%
Backstroke	Degree	0.60	4.80	700.00%

As table (2) shows, there are rates of improvement of the pos test compared to the pre test for the subjects of the basic research sample in terms of the level of performance of basic swimming skills under consideration, which rates

varied between (566.67% : 700.00%).

The researcher attributes the high rates of improvement to the effectiveness of the suggested educational program which included a set of scientifically prepared trainings

that suit the nature of the research sample (blind subjects). The availability of an adequate number of aids and the use of supporting tools led to increasing the psychological safety factor and reducing anxiety and fear of water as an unknown medium for the subjects. All this contributed to the improvement of the level of performance of the basic swimming skills under question.

This result is consistent with Ibrahim Rhouma et., al. (2005) who indicates that swimming is one of the beloved recreational activities for this category of disability which considers water medium as a means to move in a linear path using arms, legs and torso movements. The teaching of the different swimming skills shall be conducted at short distances using sound generating targets in order to move towards its direction, and afterwards increasing the distance gradually and moving from behind the moving sound in front of the blind till he gets used to moving in linear paths.

Thus the validity of the second hypothesis has been established.

Findings:

In light of the research hypotheses, objectives and the obtained results, we can conclude the following:

1- The educational program that uses stimulus-supported flotation tools has a positive impact on the level of performance of some basic swimming skills (getting used to the water – breathing – horizontal float on the front and recovery - horizontal float on the back and recovery – breaststroke – backstroke) among blind children.

2- There are rates of improvement in the post test compared to the pre test of the subjects of the basic research sample in terms of the level of performance of some basic swimming skills, which rates varied between (566.67% : 700.00%).

Recommendations:

1- The necessity of using stimulus-supported flotation tools when teaching blind children the basic swimming skills.

2- Manufacturing suitable flotation tools in order to teach blind children the basic swimming skills.

3- Providing adequate educational atmosphere in order to make blind children

feel safe and come over their fear of water.

4- Preparing adjusted educational programs that are suitable for blind children when teaching them how to swim.

5- Providing courses for the teachers who work at schools for the blind in order to keep them informed about what is new in teaching methods and styles.

6- The necessity of preparing swimming teachers who are capable of dealing with blind children.

7- Conducting similar scientific studies to teach blind children different swimming methods.

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