

## **The Effect of Using Independent Learning (Discovery - Individual) on the Level of Skill Performance among Students of Swimming Specialty- Al Azhar University**

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### **Introduction and problem of the study:**

Swimming is considered one of the branches of water sports, but it is the basis for all types of water sports in the Faculties of Physical Education with the aim of teaching students different methods of swimming. Water sports teachers must provide multiple learning methods for these methods, some of which depend on the learner, Some of which depend on the teacher, and some of which depend on learning technology and in it is done Reliance on the teacher and the learner at the same time, and one of these methods is the independent learning method, which is divided into discovery learning and individual learning.

The independent learning method is one of the methods that make the learner the main focus of the educational process, as it works to attract the learner's attention, defining the

objectives of the lesson and linking it to the skill parts in a connected chain and ensuring that the learner knows what he has learned or determining when and how to get help,

As well as the interaction and alertness of the teacher, and providing assistance. When needed, as with the independent learning method, feedback can be provided, the learner's performance evaluated, and a score for the educational level can be set. (5: 251, 269)

This method relies on the use of learning technology in teaching as an applied science that depends on educational technology and its role in the educational process. Some educators also emphasize the importance of this role, pointing to educational technology in its modern concept of devices, tools, resources, educational positions, educational strategy, continuous evaluation, feedback, good role for the

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teacher and participation Effective for the learner, it interferes in all educational fields, which leads to effective educational development and an increase in the yield of the educational process. (23:17)

The method of independent learning is achieved in the correct manner by using two main methods, which are the method of learning by discovery. To information and facts, as well as thanks to the American "Jerome Brunner" for coining the word "discovery learning." (36) (11: 80-81)

Katherine et al. (2003) believes that directed discovery is an indirect approach to the teaching process that the teacher uses when he wants students to discover the solution through a series of well-designed questions. (35: 246-247)

While Bonnie (2003) believes that the guided discovery method is the use of thinking skills of high ranks to discover the correct artistic performance of different skills. (136: 28) And Abd al-Salam Mustafa (2000 AD) points out that it is one of the most effective methods of developing scientific thinking, because it provides opportunities

for students to practice the processes of investigation and study on their own. (12: 82) As "Majdi Aziz" (2004AD) points out.

It is a path that the learner takes under the guidance of the teacher to achieve learning by discovering new information using the mental and mental processes required by the nature of this information. (18: 303)

There are many studies in the mathematical field that used the guided discovery method in education, such as the study of "Nermin Fikry and Hana Mahmoud" (2000 AD), "Rabeh Muhammad" (1999 AD), "Fadia Attia" (1998 AD), "Nahed Khairy" (1998 AD) All of which indicated that using the guided discovery method is better than using the traditional method for learning motor skills. (26) (6) (16) (25)

The second method is the individual learning method, a strategic method that shapes and volunteers teaching in a way that suits the aspects of the individual's ability and needs, in terms of addressing learning objectives, activities, sources, and mastery level for learning. Modern trends call for interest in the individual learner to

become a fundamental part of the educational process as well as calling for the development and modification of the teacher's role.

To become the designer of the educational environment in a manner that fits the roles between the teacher and the learner, who in turn will be a positive participant in the learning process by making implementation and evaluation decisions. (6: 286-287)

And that the idea of individual learning is based on the concept of self-learning, as it helps the learner to rely on self, perseverance and honesty when performing the required responses, as the course material is divided logically into small regular parts in a sequence, each part of which requires a positive response from the learner, and through the gradual support of the learner's responses

And providing him with feedback, the learner turns towards learning what he intended for him to learn, as individual education is one of the methods of learning in which the teacher creates an educational program in which the educational material is specially prepared and presented in the form of a

programmed booklet or educational machines and devices in order to lead and direct the learner. (3: 217)

Abd al-Azim al-Farajani (1995 CE), Zaher Ahmad Muhammad (1997 CE), Salah al-Din Khidr (1996 CE), Kawthar Kojak (1997 CE), and Muhammad Najib bin Hamzah (2003 CE) indicate that Individualized education expresses in its content the self-programmed education. (13: 65) (8:242) (9: 57) (17: 344) (22: 369)

The researcher believes that the use of independent learning method may help to teach breaststroke swimming in a more effective and easy way than learning it in the traditional way as it is a compound swimming that requires more effort and time to learn for students due to the difficulty of learning it at a large age stage such as the age of college students, but it needs more teaching methods.

An evolution from the traditional method used, which is subject to a lot of criticism about the extent to which it takes into account the individual differences of the learner's capabilities and uses the model only and suffices with guidance and counseling

without the slightest active participation in the educational situation.

With modern learning methods, including the independent learning method, which can be used to teach breaststroke swimming, which may have the greatest impact on education, as well as improving the technical performance of that swimming and providing students with a knowledge outcome of this swimming.

This is what was confirmed by "Showers" (2005) and "Dante" (2005) that most trainers consider breaststroke to be one of the most difficult swimmers, as it is difficult to reconcile between all parts of the body, especially during retrograde movement outside the water, especially when accompanying. The same applies, as we find that both arms, head and part of the shoulders are raised outside the water surface. (34) (29)

Usama Ratib (1998) and Muhammad Ali al-Qatt (2000) agree with them that swimming breaststroke requires high technical performance in addition to more muscle strength, experience, and familiarity with the water medium than other swimmers. Three as this is a prelude and easy to learn. (1: 177) (20:54)

From this standpoint, the researcher saw the use of

independent learning method (discovery and individualization), where the learner is the focus of the educational process to achieve himself, and his awareness of all the variables associated with the educational process, and the learner is effective and positive and not just a future and this is through the application of two basic methods, namely discovery learning and individual learning, In order for the student to think about the detailed technical steps of the technical performance of breaststroke swimming, the relationship between each stage and the other,

And the most important consideration in the form of performance in order to achieve ease and mastery in learning, identify the wrong conditions and how to fix them, and the factors affecting the performance and accuracy of the technical performance of breaststroke, and work To improve them, common mistakes in performance and try to avoid them, and to know the criteria for evaluating the technical performance of breaststroke so that the student can perform well and distinctively.

Through the researcher's briefing on previous studies and scientific research conducted in the field of sports activities in general and in swimming in particular, he

found that the field of swimming lacks scientific research and studies that contribute greatly to solving some of the problems facing students, including adopting new methods in education to improve the level of performance ,

In addition to the absence of a single scientific study to the researcher's knowledge that dealt with the two methods of discovery and individuals in learning to swim in general and breaststroke in particular, and this prompted the researcher to use the independent learning method in its two parts (discovery, individual) to show the extent of their impact on the teaching of breaststroke to college students and compare it with the method The traditional practice of teaching, which may contribute significantly to providing a new addition to learning methods aimed at improving the educational process for students at the college.

**Research objective:**

This study aims to identify the effect of the use of independent learning (discovery - individual) on the level of skill performance among students of swimming major - Al-Azhar University

**Research hypotheses:**

1- There are statistically significant differences between the mean of the pre and post measurements in the level of

learning the skill of swimming breaststroke among students of the fourth year, the experimental research group.

2- There are statistically significant differences between the mean of the pre and post measurements in the level of learning the skill of swimming breaststroke among students of the fourth year, the control research group.

3- There are statistically significant differences between the mean of the two dimensions of the experimental and control group on the level of performance of breaststroke in favor of the experimental group.

**Terms used in the search:**

**Discovery method:**

It is a teaching method that uses high-ranking reasoning skills to discover correct artistic performance.

**Single method:**

It is a method of learning in which the teacher uses an educational program in which the educational material is specially prepared and presented in the form of a programmed booklet or educational machines and devices in order to lead and guide the learner. (3: 217)

**Study procedures**

**-Study Approach**

The researcher used the experimental method on two groups, one experimental and the other control, due to its relevance to the nature and objectives of this study.

### Study population

The study population was deliberately selected from students of the fourth year at the Faculty of Physical Education, Al-Azhar University for the academic year (2019-2020.)

#### -The study sample

The sample was chosen by the deliberate method from the study population and their number was (30) students for the basic experience with a percentage amounting to 33.10% of the total study population, in addition to (16) students to conduct the exploratory study, the scientific transactions of the research,

and the sample was divided as follows:

- (١٥) -student experimental group.
- (١٥) -control group students.
- (١٦) -student exploratory group.

#### Sample selection conditions:

- 1- Students have no previous experience in breaststroke swimming.
- 2- Availability of the sample and the ability to teach for all students of the study sample.
- 3- The fourth year students have three years of experience in the college, which helps them learn breaststroke swimming.

Moderation of the research sample distribution

**Table (1)**  
**Homogeneity of the research sample N = 46**

Variables	Measure unit	SMA	standard deviation	Mediator	Coefficient of torsion	
Age	Year	19.25	1.52	19.20	0.98	
Height	Cm	169.18	1.62	169.10	-0.57	
Weight	Kg	68.90	2.18	68.50	0.85	
IQ	Degree	115.52	2.17	115.00	0.52	
Skillful performance	Swimming 12.5m chest	Degree	4.98	0.77	5.00	0.34
	Swimming 25m chest	S	25.35	0.48	25.00	0.66

Table (1) shows that the skew coefficient for the variables (age - height - weight - intelligence - skill) ranged between (-12. To 0.98) and

these values are between  $\pm 3$  and fall below the moderate curve, which indicates the homogeneity of the research sample.

**Table (2)**  
**Significance of differences between the control and experimental groups in the variables under investigation N 1 = n 2 = 15**

Variables	Measure unit	Experimental group		Control group		T value	Indication level	
		M	E	M	E			
Age	Month	19.21	0.21	19.22	0.68	0.58	Not significant	
Height	Cm	167.20	0.17	167.28	0.75	0.62	Not significant	
Weight	Kg	67.25	0.36	67.21	0.54	0.14	Not significant	
IQ	Degree	63.85	0.52	63.20	0.39	0.63	Not significant	
Skillful performance	Swimming 12.5m chest	Degree	4.65	0.31	4.41	0.32	0.47	Not significant
	Swimming 25m chest	S	25.47	0.74	25.29	0.14	0.32	Not significant

The tabular "t" value at the level of 0.05 = 1.746

It is evident from Table (2) that there are no statistically significant differences between the mean of the two tribal measurements of the control and experimental groups in the variables under investigation, which indicates parity of the two groups in those variables.

**Data collection tools:**

1- Devices and tools for measuring the physical aspect:

-Alrstamer to measure length (cm.)

Medical scale to measure weight (km.)

2- Tools for measuring the performance level of breaststroke- :

12.5m breaststroke swimming test (score)

-Swimming test (50) meters chest time

3- Tools for swimming lesson  
 Core - Float plates - Ropes - Fins - Whistle - Stopwatch to measure time.

Water Programmer Handbook (to be used inside the water.)

•Opinion poll of 10 experts specialized in the field of water sports training. Attachment (1), in order to identify the skill tests and their relevance to the study sample. Attachment (2)

6- Expert opinion survey form

**The researcher designed the proposed exercises for teaching breaststroke by the following:**

A comprehensive survey of Arab and foreign references and studies related to the subject of study.

Opinion poll of 10 experts in the field of water

sports. Attachment (1), with the aim of identifying the validity and suitability of water exercises for the study sample. Attachment (5)

-The exercises that were agreed upon by the experts were determined at a rate ranging from (85% - 100%), and exercises that achieved less than (85%) were excluded.

The total period of the program, the number of weekly units, and the timing of each unit were also determined.

7- Swimming test (12.5-25) issued

The technical performance of students was measured by three arbitrators attached (6) of the faculty members of the college, each of whom scored a score for each skill in proportion to the technical performance of the student, provided that the average scores of the three referees are recorded and the student is calculated a score of 10 points.

### **Basic study experience**

-The researcher made measurements (age - height - weight) and physical tests on the study sample for groups (experimental and control) in order to conduct homogeneity and parity for the study sample.

-The researcher applied the educational part that was designed using the discovery

and individual method of the experimental group on Sunday and Tuesday of every week.

The educational part was applied in the traditional way to the control group on different days for the discovery and individual learning group.

-The researcher took into account that the application time is similar to the study schedule of the fourth year in terms of the duration of application, the number of lectures and the time of the lecture. The researcher also took into account that the curriculum for the fourth year includes, in addition to teaching breaststroke, the development of the two swimmers (crawl, back) that were taught in previous years.

-The duration of the application was determined for a period of (10) weeks, and this study was conducted in the period from 4/10/2019 to 12/23/2019 by (2) teaching units per week, and the time for implementing the unit was limited to (90) minutes.

And the following table No. (6) shows the chronology of the lesson

Presentation and discussion of results

## First: Presenting the results

**Table (3)**  
**Significance of differences between the experimental group in the level of performance of breaststroke N = 15**

Variables	Measure unit	Pre-measurement		Post measurement		Differences between the two averages	Improvement percentage	The calculated value (v)	Statistical significance
		M	E	M	E				
Swimming 12.5m chest	Degree	4.65	0.31	8.65	0.18	4.00	46.24%	4.12	Indicated
Swimming 25m chest	S	25.47	0.74	21.36	1.02	4.11	16.13%	4.90	Indicated

•The tabular (t) value at the significance level (0.05) = 1.753

Table (3) shows that there are statistically significant differences between the averages of the pre and post measurements in the level of some skill variables for (breaststroke) swimming

among students of the fourth year (experimental research group), where the tabular value of (t) came between (4.12 to 4.90), which is greater From its tabular value at the significance level (0.05.)

**Table (4)**  
**Significance of differences between the experimental group in the level of performance of breaststroke N = 15**

Variables	Measure unit	Pre measurement		Post measurement		Differences between the two averages	Improvement percentage	The calculated value (v)	Statistical significance	
		M	E	M	E					
Swimming breaststroke	Swimming 12.5m chest	Degree	4.41	0.32	5.34	0.17	0.91	17.04%	2.12	Indicated
	Swimming 25m chest	S	25.29	0.14	23.09	0.09	2.2	9.052%	2.19	Indicated

•The tabular (t) value at the significance level (0.05) = 1.753

Table (4) shows that there are statistically significant differences between the averages of the pre and post measurements in the level of some skill variables for (breaststroke) swimming

among students of the fourth year (the control group), where the tabular value (t) came between (2.12 to 2.19), which is greater From its tabular value at the significance level (0.05.)

**Table (5)**

**The significance of the differences between the two dimensions of the experimental and control research groups in the level of skillful performance of (breaststroke) swimming N 1 = n 2 = 15**

Variables		Measurement unit	Experimental group		Control group		The calculated value (v)	Statistical significance
			M	E	M	E		
Swimming breaststroke	Feet strokes	Degree	8.65	0.18	5.34	0.17	3.62	Indicated
	Arm movements	Degree	21.36	1.02	23.09	0.09	3.15	Indicated

•The tabular (t) value at the significance level (0.05) = 1.697

It is evident from Table (5) that there are statistically significant differences between the averages of the dimensional measurements of the two experimental and control groups in the level of skillful performance of breaststroke swimming, where the tabular value of (t) came between (3.62 to 3.15), which is greater than its tabular value at the level of significance (0.05)

### **Discuss the results**

Table (3) shows that there are statistically significant differences between the pre and post measurements in the level of skill performance of the breaststroke under study.

The researcher attributes the results of the experimental group to the distinction of the discovery method as a method of teaching with several features that can be made at the forefront of teaching methods

if the capabilities are available to achieve this, as this method takes the learner as a center for the learning process and organizes the building of the scientific content of the educational material to reach and stimulate (good) thinking. And developing his abilities through self-learning, as it is a continuous process that does not end once the lesson ends, but rather helps the learner to search for himself about how to learn. Real learning is what achieves the learner the maximum understanding of what he has learned to reach optimal performance and ease of remembering because it gains a place in the learner's mind in forming concepts and facts.

It is the one who uses interactive teaching that is achieved by integrating learners in an active dialogue to increase their efficiency,

organize, display, interpret, explain and display information, develop their attention, independence in thinking and satisfy their positive interaction with the enjoyment of learning, as well as learning outcomes. Discovery is more useful for what they have learned in terms of information and concepts to be used whenever the need arises, i.e. application. (28: 1-19)

This result is consistent with what Magdy Aziz (2004) indicated, that learning using the guided discovery method creates positive trends for the student towards studying different courses and puts him in a state of activity and interaction in the educational situation. (18: 300-301)

Katherine (2003) also indicated that directed discovery allows students to respond to the challenges that exist in developing their level of performance (35: 247)

This result is also consistent with what was indicated by "Bonnie" (2003) that the guided discovery method helps students improve their motor performance by using high-order thinking skills that help them discover the

correct artistic performance (28: 135)

The researcher attributes the results of the experimental group to (the individual method) to its distinction as a method of teaching with several features, including that it divides the scientific material into small situations so that it is easy to learn and teach,

And the chances of success in it are easy, and the subject is not taught in one go, and he also uses programmed learning, whose results are prepared. Immediate, where the questions are posed and are answered by the learner himself and he sees the result immediately, and this assures the student to complete the education process.

The researcher attributes these results to the positive effect of individual learning, as he uses learning technology as part of his educational methods, which increases the positive impact on learners by using feedback, which is not available in the method of discovery that depends on finding solutions to problems during the lesson.

By this, the assumption of the first research has been fulfilled, which states that there are statistically significant

differences between the mean of the pre and post measurement in the level of learning the skill of swimming breaststroke among students of the fourth year, the experimental research group.

Table (4) shows that there are statistically significant differences between the averages of the pre and post measurements in the level of some skill variables for (breaststroke) swimming among students of the fourth year (the control group), where the tabular value (t) came between (2.12 to 2.19), which is greater From its tabular value at the significance level (0.05) and the researcher attributes that result to the regularity of the control group in attending scientific lectures within the learning program decided by the college

The results of the study "Amal Ali Khalil" (2004) on video tapes and CDs, maps, samples, books and publications agree with that. Their intrusion into the field of education and the educational environment in all its aspects such as video, computer and others has led to the effectiveness of learning, whether it is academic or

practical, in addition to the related knowledge.

All these materials provide a kind of educational experience that achieves its own goal, and through these various experiences, the general goal of using these means is achieved. (23: 4)

In order for the teacher to push his students to learn, he must use different and multiple methods and methods, which requires the teacher to be fully conversant with the different teaching methods and methods, how learning occurs on the part of students, and how the methods and methods used affect the speed of achieving the goal of the teaching and learning process. (21:22)

It is necessary for the student to be familiar with the latest methods and modern technologies that enable them to deliver knowledge to learners and create better areas for improving the teaching and learning process, and from here the importance of choosing the appropriate teaching method to achieve the desired goal, and this choice depends on the teacher's experience and the extent of his awareness of the nature, components and variables of situations. Various educational (37:29)

The researcher also attributes this progress to the control group to the fact that regularity and continuity in practice and learning with the teacher providing a set of graduated exercises from easy to difficult and practice from the student provided the learner with a good opportunity to learn the skills in question, which had a positive effect on the efficiency of skill performance.

Thus, the second hypothesis of the research has been fulfilled, which states that there are statistically significant differences between the mean of the pre and post measurement in the level of learning the skill of swimming breaststroke among students of the fourth year, the control research group.

It is evident from Table (5) that there are statistically significant differences between the averages of the dimensional measurements of the two experimental and control groups in the level of skillful performance of breaststroke swimming, where the tabular value of (t) came between (3.62 to 3.15), which is greater than its tabular value at the level of significance (0.05). The researcher attributes that escapism to the regularity of

the experimental research sample using the independent learning method, which included my method (wave discovery learning - solitary learning.)

These results also agree with "Azza Abdel Moneim and Hala Malek" (1995) and "Najia Al-Deeb" (1998) on the importance of using video during education as it leads to correct performance, and the capabilities of video devices allow the image to be slowed down, stopped or added to it. Or delete what can be deleted, in addition to that, the students' views, whether for their performance or for optimal performance, lead to their excitement and push them to make more effort to improve the level. (15) (24)

These results are also consistent with the results of many scientific studies that dealt with learning methods in the field of physical education to the effective positive impact of its use in learning various motor skills, including the study of "Osama Salah Fouad" (1998 AD), "Sariscany and Pettigrew" (2000 AD) ) "Muhammad Ali Mahmoud and Mustafa Muhammad Nasreddin" (2003 AD) that programmed education has a

positive effect on the level of skill performance in sports and the importance of using closed circuit television in the process of learning skills through multiple uses. (2) (33) (21)

The researcher also explains the results to the positive role of the learner in this type of education, as he implements the learning process and he is the one who asks, answers and corrects the answer, meaning that the role of the learner in it is positive, and taking into account individual differences where the program is divided into different frameworks and the learner is the one who deals with him according to his abilities and capabilities and ends It is at the speed allowed by these capabilities and preparations for each individual separately,

And the goals are chosen very carefully so that the program does not permeate any ambiguity, especially since this type of education takes place in the absence of the teacher, and from here the clarity, accuracy and formulation of goals are among the features that distinguish this type From education.

These results are consistent with what was explained by

"Abd al-Salam Mustafa" (2000 AD) that the directed discovery method is one of the most effective methods for developing scientific thinking and scientific research, investigation and discovery skills. It also develops higher thinking skills such as analysis, synthesis, evaluation and others. (12: 82) And Magdy Aziz (2004 AD) agrees with him, as he explained that learning by discovery of the wave increases the capabilities of the learners to understand, analyze and synthesize. (18:30) As Bonnie (2003 AD) explained that discovery learning makes information more reminiscent and stable than traditional learning. (28: 136)

Thus, the third hypothesis of the research was fulfilled, which states that there are statistically significant differences between the mean of the two dimensional measurements of the experimental and control group on the performance level of breaststroke swimming in favor of the experimental group.

### **Conclusions:**

From the researcher's frame of reference and from the results that could be

reached, the following was concluded:

-That the independent learning method in two parts (discovery and individual) has a positive effect on the performance level of breaststroke.

The traditional technique had a limited effect on the improvement of the skill level in swimming breaststroke.

The use of technological means contributes to the improvement of the performance level of breaststroke swimming

#### **Recommendations:**

Through the conclusions that could be reached, and within the limits of the study sample, the researcher recommends the following- :

-The use of independent learning method (discovery and individual) in learning breaststroke.

-When the technological capabilities are available, the independent learning method is used in the (individual) apartment, as it has a positive effect on improving the skill level of swimming breaststroke.

-Using the independent learning method, with its two parts (discovery and individual), when the technological capabilities are not available, as it has a

positive effect on the teaching of breaststroke.

-The use of modern scientific methods and techniques in teaching and learning students in various academic teams.

-Work to provide auxiliary and alternative tools to help the learning process.

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