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The Effect of Using Blocked and Random Practice on the Level of Skill Performance in Swimming among Novices in Some Clubs of Kuwait

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Abstract

It is noticed that novices in swimming do not reach or achieve the required level of perfection in the skill performance of swimming. This is despite the great effort exerted in practice and gradual progress in training on skills. This is in addition to the feeling of tiredness and distraction among novices a result of using traditional techniques. That is despite following techniques that facilitate training on technical aspects of front crawl and back crawl swimming.

The significance of the study lies in what follows: Designing a training programme using both the concatenated and unmethodical techniques of training on the skills of front crawl and back crawl swimming.

Aim of the study: The research aims at identifying the difference between concatenated training and unmethodical training in affecting the level of skilled performance in crawling swimming of both breast stroke and back stroke among juniors.

Most remarkable findings: Using the traditional practice programme has a positive effect on improving the level of skill performance in front crawl and back crawl swimming among novices.

Most Notable Recommendations: The researcher recommends using the technique of blocked training in sports in which interference in tasks is little, and movement is frequent, such as swimming skills.

Keywords: blocked and random Practice; skills, swimming; Kuwait

Introduction:

According to **Wagih Mahgoub (2016), Cheong et al., (2017)** and many other authors in the literature, the blocked and random techniques are the most commonly used techniques in designing practice programmes and in educational curricula. (10: 25), (16: 311)

The study of **Shea & Morgan (2015)** is the first study to compare the effectiveness of arranging training (teaching) programmes in different manners. The results of the study have shown that the technique of blocked training with little interference in tasks has the effect of speeding up the acquisition of skill performance. As for random practice, with high interference in tasks, it has a positive effect on maintaining skill for a long time despite the low level of skill performance. (21: 185)

Stachura, et al., (2017) suggest that blocked practice is used when more than one skill are to be learnt or trained on. That is to perfect or master them, then keep them in the long term motor memory. Then, they are recalled and retrieved during competition in a good and quick way. It is supposed that a trainer or an instructor will teach these skills in a single training session in a sequential way. This means that he will repeat the show of the first skill,

say, for (900) times. Then, he will move to the second skill to repeat it for (900) times. Afterwards, the third skill will be so, and so on. In this case, this method following the theory of interference, is known as (low interference blocked training). (22: 45)

Schmidt (2016) and Hebert, et al., (2015) note that during (low interference blocked practice), there was a rise in the level of learning in the short-term motor memory while practising. However, this level falls during the test of memorizing (keeping) or retention, as well as in the period of transfer of training effect. (20: 101), (17: 94)

Naheda Abd Zaid (2017) defines (blocked practice) as the training in which an individual attempts to learn skills in a concatenated way, seeking the perfect performance of the skill, then moving to learning another skill. (1: 17)

Both **Bahgat Abu Tameii (2014)** and **Dina Badr (2019)** agree on the second method in the theory of interference. It involves training on skills in an random way. It is called (high interference practice). Here, skills are learned in such away that every single skill is shown for training no more than two consecutive times repeatedly. Training on skills is organized randomly. Thus, the memory cannot expect what will be the subject of training in the next repetition. (2: 77), (7: 82)

Maglischo (2014) suggests that when the arrangement is random (with high interference), the progress level of learning those skills is slow, compared to that in the first method. However, this raises the level of keeping those skills in the motor long-term memory. That is in memorizing (keeping) tests and those of transfer of training effect. (18: 141)

Schmidt (2016) defined it as (training in such a way that the system of semi-haphazard attempts is used to perform tasks). It is known as (high contextual interference). (20: 103)

Gamal Mahmoud (2015) states that the development of the trainees level in the technical aspect of swimming needs the perfection (mastering) of more than one basic technical skill, and trying to link them to produce the movement automatically, and with the least effort. (11: 62)

Manar Ahmed (2015) refers to the importance of teaching kinds of swimming through suitable instruction techniques that give beginners the feeling of safety and continual thinking to conceive every motion in swimming. (4: 113)

Ya'rob Khayoun (2013) notes that the manners and organizational designs of training have been several and various depending on several variables. Some variables are related to the trainee himself and others are related to skills, as for their kinds, the degree of their difficulty or their organization, such as the techniques of blocked and random practice. (9: 52)

The researcher shows the research problem referring to the fact that novice swimmers do not reach or achieve the due level of perfection in skilled performance of swimming This is despite the great effort exerted in training and the gradual progress in training on skills, in addition to the feeling of tiredness and distraction as a result of using traditional techniques. That is despite following techniques that facilitate training on technical aspects of front crawl and back crawl swimming.

Significance of the study: This lies in what follows:

- Designing a practice programme using both the blocked and random techniques of training on the skills of front crawl and back crawl swimming.

Aim of the study: The study aims at identifying what follows:

1) The effect of traditional practice on the level of skilled performance of swimming among novice swimmers in front crawl and back crawl swimming.
2) The effect of blended learning using the technique of blocked practice on the level of skill performance in swimming among novice swimmers in front crawl and back crawl swimming.
3) The effect of blended learning using the technique of random practice on the level of skill performance in swimming novice swimmers in front crawl and back crawl swimming.
4) The differences between traditional practice and the practice using both techniques of blocked and random practice concerning the effect on the level of skill performance in front crawl and back crawl among junior swimmers using the post-test.

Hypotheses:

1) There are differences that are statistically significant between the (pre) and (post) tests of the effect of traditional learning on the level of skill performance in front crawling breast and back crawl swimming.
2) There are differences that are statistically significant between the (pre) and (post) tests of the effect of blended learning using the technique of blocked training on the level of skill performance in front crawl and back crawl swimming among novice swimmers.
3) There are differences that are statistically significant between the (pre) and (post) tests of the effect of blended learning using the technique of random practice on the level of skill performance in front crawling and back crawl swimming among novice swimmers.
4) There are statistically significant differences between traditional practice and practice using both blocked and random practice techniques concerning the effect on the level of skill performance in front crawling and back crawl swimming among novice swimmers in the post-test.

Research Terminology:

Blocked practice: Schmidt (2016) defined it as the practice in which all attempts to perform one single task take place, without interrupting the training to perform another task. It is known as (low contextual interference). (20: 462)

Random practice: Wagih Mahgoub has defined it **(2016)** as the practice in which tasks are presented haphazardly or unmethodically so that training embraces different tasks, and in a mixed way during training. (10: 222)

Literature Review:

First: Arabic literature

* We find the study of **Hadi Al-Gharbi (2012)** (5)**,** entitled: The effect of designing blended learning using high-tech media on acquisition and first aid skills among students of the department of Physical Education in Kuwait.

Aim of the study: It aimed at identifying the effect of high-tech media in blended learning on learning or acquisition and first aid skills.

Methodology: The study used to experimental approach.

Population of the study: Those were (16) students of the department of Physical Education, in the Faculty of Elementary Education, in Kuwait.

Most Notable Results:

The group that had received the programme of multimedia, using bended learning were superior in acquiring the skills of first aids compared to the other group that learned using the traditional method.

* **Tamer Garrar and Samira Obrabi (2013)** (8). This is a study entitled: The effect of information and communication technology on the educational proceedings (output) in back crawl swimming among students of Physical Education, in Jordanian University.

Aim of the study: It aimed at identifying the effect of using information and communication technology on both the level of skill performance and kinematic variables in back crawl swimming.

Methodology: The study used the experimental approach.

Population of the study: These were (26) students.

Most significant results:

It was found that using the technology of information and communication has a great effect on learning back crawl swimming. For there were statistically significant difference between members of the control group and those of the experimental group in the kinematic variables in back stroke swimming, which was in favour of the experimental group. This means it was better.

*** Maisa Afifi (2015)** (3). This is a study entitled: Setting up an educational website and its effect on learning breast stroke swimming among girl students of the Faculty of Physical Education, Zagazig University.

Aim of the study: It aimed at identifying the effect of setting up a website on the views and emotional or affective impression, knowledge acquisition and skilled performance in breast stroke swimming.

Methodology: The study used the experimental approach.

Population of the study: They are 30 female students.

Most significant results: There is a superiority achieved by the group that used blended learning in the aspects of skilled, cognitive and affective learning of breast stroke learning, compared to the group that used the traditional way of learning.

*** Emad Nashmi (2015)** (12). This is a study entitled: The effect of two techniques of learning, the pure and the gradual partial technique in teaching breast stroke swimming among novices aged (5-6).

Aim of the study: It aimed at identifying the effects of two techniques of learning, i.e. the pure and the gradual partial ways of teaching breast stroke swimming among beginners, aged five to six years.

Methodology of the study: It used the experimental approach.

Population of the study: They are 20 children.

Most significant results: It was found that the technique of gradual partial learning achieved by the second experimental group is better than the manner of pure partial learning achieved by the first experimental group of teaching breast stroke swimming to novices.

*** Sobhi Nour Addin & Yasser Abdel-Fattah (2016)** (13)**.** This is a study entitled: The effect of interference in learning shooting in basketball.

Aim of the study: It aimed at identifying the effect of interferenfe an learning to shoot at the basket in basketball.

Methodology: The study used the experimental approach.

Population of the study: They were twenty female players under the age of (12).

Most significant results: There were statistically significant differences showing the superiority of the group that had used random practice (high interference), compared to the group that used blocked (serialized) practice. That was in the test of memorizing and of transference of training effect.

*** Sadek Al-Hayek & Kashef Zayed (2018)** (6). This is a study entitled: The effect of learning some skills of swimming using worldwide webs on the viewpoint of students of the Faculty of Physical Education about the web.

Aim of the study: Identifying the effect of learning some skills of swimming using worldwide web or the internet according to the viewpoint of students of the Faculty of Physical Education in the Jordanian University concerning this web.

Methodology: The study used the experimental approach.

Population of the study: It included (40) students.

Most significant results: There were statistically significant differences between the viewpoints of the two groups concerning the use of the internet in learning, which gives superiority to the members of the experimental group who had learned swimming using the internet.

*** Bashair Shalla & Hatim Ibrahim (2019)** (14). This is a study entitled: The effect of the reciprocative technique interspersed with blocked and random practice on learning some basic skills of basketball.

Aim of the study: It aimed at identifying the effect of the reciproactive technique interspersed with blocked and random practice on learning some basic skills of basketball.

Methodology: It used the experimental approach.

Population of the study: It included (20) female students.

Most significant results: It was found that the first group that had learned using the reciproactive technique interspersed with the blocked practice was better in the free kick or

throw compared to the second group of random practice. It also turned out that the second group that learned using the reciprocative manner interspersed with random practice was better than the first group (of blocked practice) in chest (swinging) pass and in high dribbling.

Second: Review of English Literature

*** Cheong et al., (2017)** (16). This is a study entitled: The practice of the skills of field Hockey along the continuum of contextual interference: A comparison of the five schedules of practice.

Aim of the study: Identifying the effects of five manners of scheduling practice on the skills of Rugby.

Methodology: The study used the experimental approach.

Population of the study: They are (55) university student players.

Most significant results: There are no statistically significant differences between the groups in acquiring and learning the skills being studied, either the group of blocked practice, that of random practice, or that of blended practice.

Researchers suggested that programmes of practice can be scheduled when teaching beginners using the suitable form of task-interference. This can involve blocked random or mixed training.

* **Afsanepural, et al., (2018)** (15). This is a study entitled: The effect of isolated and random practices and increased systematicality on learning different kinds of pass in basketball.

Aim of the study: Identifying the effect of training using blocked and random manners, as well as regular increase on recalling and transference of learning effect related to different kinds of pass in basketball.

Methodology: The study used the experimental approach.

Population of the study: They were (45) students in preschool.

Most significant results: There were no differences among groups in skill acquisition of different kinds of pass. However, the group using regular increase of training was better in recalling and transference of training effect in kinds of pass in basketball.

*** Rad, et al., (2018)** (19). This is a study entitled: A comparison of prohibited and random practices when acquiring swimming skills.

Aim of the study: It aimed at comparing the contextual interference of blocked and random practice and its effect on acquiring swimming skills.

Methodology: The study used the experimental approach.

Population of the study: They were (20) female swimmers.

Most significant results: It was found that group of blocked practice was better in acquisition of swimming skills, compared to the random practice.

The researcher shows that studies in the literature have referred to the diversity of techniques for training students on front crawl and back crawl swimming. These techniques included blocked practice and random practice. These were the most commonly used techniques in

training (swimmers) on skilled and technical performance of front crawl and back crawl swimming.

Procedures:

Methodology:

The researcher used the experimental approach, designing three equivalent (equal) groups.

Population and subjects of the study:

The population of the research consisted of novice swimmers in Kuwait. The sample of subjects was selected using the purposive method. The sample included (37) novice subjects. They were divided into three groups. The first was the control group. It included (10) novices trained using the traditional method. The second was an experimental group. It included (10) novices trained using the blocked practice technique. The third was another experimental group of (10) novices trained using the random manner of training.

Statistical account of the research sample (homogeneity):

The researcher did, on Saturday, October, 3rd, 2019 and on Sunday October, 4th, 2019, identify the homogeneity among the individuals of the research population in all variables being examined. Table no. 1 shows that.

Table (No. 1)
Statistical account of the research sample in the development variables being examined
N = 30

Variable	Measurement unit	Arithmetic mean	Standard deviation	Median	Coefficient of torsion
Age	Year	19.75	0.43	15	-0.28
Height	cm	175.62	2.92	161.0	-1.28
Weight	kg	70.97	2.86	61	-0.13

From the statistical account in Table No. (1) of the research population in development variables, it is clear that the values of coefficient of torsion related to students in the development variables vary from -1.28 to -0.13.

All these values were between (+3) and (-3). This suggests the moderation and closeness of the data in the development variables, which reflects homogeneity among junior subjects of the research.

Table No. (2)
The statistical account of the research sample in skilled performance variables being examined

N = 30

Variable	Measurement unit	Arithmetic mean	Standard deviation	Median	Coefficient of torsion
The performance level of breast crawling swimming	Degree	0.09	0.29	0.00	0.93
The performance level of back stroke swimming	Degree	0.08	0.26	0.00	0.85

From Table No. (2), it is clear that the values of coefficient of torsion related to student subjects vary from (0.93) to (0.85). All these values were between (+3) and (-3). This suggests the moderation and closeness of the data in all variables of the research, which reflects the homogeneity among the research population.

Data collection materials:

The researcher has selected the materials used for data collection which are:

* Devices and tools. * Tests.

* The training programme, designed by the researcher.

Devices and tools: these are:

- A device (Restameter) for measuring height.

* Recording forms.

* (30) float boards.

* (30) foot fins.

A medical or physical scale with reliability, validity and regularity for measuring weight.

*** Tests and Measurements:**

We measured the level of skill performance in both front crawl and back crawl swimming (by degrees):

The level of skill performance of individuals of the three groups was evaluated. The groups were (the control group – the experimental group (blocked practice) – the experimental group (random practice)).

This was done by a refereeing committee composed of three swimming umpires in the Kuwaiti swimming association. The total mark was ten in the pre-test then, the researcher worked out the mean of the umpires' estimation of each novice swimmer.

The exploratory experiment:

The researcher carried out the exploratory experiment studying the research explorational sample drawn from the research population, and apart from the main sample. This drawn sample consisted of (7) novices. That took place from Saturday, October, 10^{th}, 2019 to Thursday, November, fifth, 2019. The purpose was calculating the scientific

coefficients of (Reliability – constancy) of the physical tests on front crawl and back crawl swimming.

Scientific coefficients of the physical tests concerning front crawl swimming.

*** Reliability:** The researcher has calculated the reliability of the skill tests being studied using the exploratory research sample. Table No. (3) shows that.

Table No. (3)
The scientific coefficients of the tests used in the research

N = 7

Variable	Correlation coefficient
Evaluation of skill performance of front crawl swimming	0.87
Evaluation of skill performance of back crawl	0.78

Meaning at the level of 0.05.

Constancy:

The constancy coefficient was calculated using the method of test and retest on the research sample of subjects which is an exploratory sample withdrawn from within the research population, and apart from the main sample. The withdrawn sample consisted of 7 novices. The time interval between the two tests was 7 days, from Saturday, October, 17th, 2019 to November, 5th, 2019. Table No. (4) shows that.

Table No. (4)
The scientific coefficients of the tests used in the research

N = 7

Variable	Correlation coefficient
Evaluation of skill performance of front crawl swimming	0.77
Evaluation of skill performance of back crawl	0.76

Meaning at the level of 0.05.

Main sample of the research:

The main sample of the research included (30) novices swimmers in Kuwait. They were divided randomly into three groups (the control group – the experimental group (blocked practice) – the experimental group (random practice)). Each group included ten novices. Then, the researcher worked out the homogeneity in the main sample of the research in the variables being studied. That was from Saturday, November, 14th, 2019 to Sunday, November, 15th, 2019. Table, No. (5) shows that.

Table (No. 5)
Statistical account of the research population in the development variables being examined

N = 30

Variable	Measurement unit	Arithmetic mean	Standard deviation	Median	Coefficient of torsion

Age	Year	19.75	46	15.10	-0.72
Height	cm	175.62	3.08	160	-0.53
Weight	kg	70.97	2.98	61	-0.38

It is clear from Table No. (5) giving the statistical account of the research population or sample about development variables that the values of coefficient of torsion concerning junior subjects of the research varied from (-0.72) to (-0.38). These values were between (+3) and (-3). This indicates the closeness and moderation of the data in all the development variables, which reflects the homogeneity among the research population.

Table (No. 6)
Statistical account of the research population in the variables of skill performance being investigated

N = 30

Variable	Measurement unit	Arithmetic mean	Standard deviation	Median	Coefficient of torsion
The performance level of front crawl swimming	Degree	0.04	0.20	0.00	0.60
The performance level of back crawl	Degree	0.03	0.18	0.00	0.55

From table no. 6, giving the statistical account of the research population in the variables of skill performance being investigated, it turns out that the values of coefficient of torsion of the students of the research sample, ranged from 0.60 to 0.55. These values were between (+3) and (-3). This suggests the similarity and moderation of the date in all variables of the research, which indicates the homogeneity of the research participants.

Pre-estimations:

The researcher conducted the pre-estimations on Saturday, November, 21st, 2019, on the three research groups [the control group – the experimental group (blocked practice) – the experimental group (random practice)].

*** Application of the proposed programme (conducting the research's basic experiment):**

After the researcher had made sure of the equivalence among the three research groups [the control – the experimental (blocked practice) – the experimental (random practice)], the proposed practice programme was applied to the three research groups during the period from Saturday, Nov., 28th, 2019 to Wednesday, Jan., 20th, 2020.

The experimental group:

The proposed practice programme was applied to the two experimental groups [Blocked practice and random practice]. Hence, the researcher met the experimental group before the execution.

The post-estimations:

After the execution of the programme had ended, the researcher conducted the post-estimations of the three research groups [the control group – the experimental (blocked practice) and the experimental (random practice)]. That was in the tests of the level of skill

performance in front crawl swimming and back crawl. That was on Saturday, Jan. 23rd, 2020, following the same conditions and requirements that had been considered in the pre-estimations.

Statistical evaluations:

The researcher used the (SPSS. V.11) programme, in which the following statistical calculations were used:

* Percentage. * Arithmetic Mean . * The Median.

* Standard Deviation. * Correlation coefficient.

* T-test. * Monomial contrast analysis.

* The post-test for differential comparisons to show the least sensible difference (L.S.D.).

Result presentation and discussion:

Results presentation and discussion of the first hypothesis:

There are statistically significant differences between the pre- and post estimations of the effect of traditional learning on the level of skill performance in front crawl and back crawl among novice swimmers.

Table No. (7)

The pre and post estimations of the control group concerning the level of skill performance in front crawl and back crawl swimming

No = 10

Serial	Skill	Pre-estimation		Post-estimation		Mean differences	The value of (t)
		Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation		
1	Front crawl swimming	6.47	0.94	7.4	0.96	0.7	2.68*
2	Back crawl	2.1	0.73	5.8	0.88	3.7	10.8*

*** Mean at the level of 0.05.**

Table No. 7 shows the pre and post estimations of the control group of the level of skill performance in front crawl and back crawl. There are statistically significant differences between the pre and post estimations, indicating the rise in the post estimation of the novices of the control group.

The table shows the existence of statistically significant differences between the pre and post estimations among the novice swimmers of the control group on whom the traditional programme was applied. The differences showed rise in the post-estimation in the skill performance of front crawl and back crawl swimming.

The researcher ascribes the improvement in front crawl to good practice and the process of feedback show, accompanying it. As for the back crawl, there was an effect of the traditional programme applied to the novices of the first group.

That is because the participants had not possessed the skills for back crawl at the beginning of the training.

Then, the skill was divided into several partitions and these were taught to the novices as follows: [leg stroke, then arm stroke, next respiration, then adaptation and adjustment of body posture during swimming). Novices at this age period are able to acquire the skilled technical performance of swimming and to retain this performance.

These results agreed with those of the studies of **Hadi Al-Gahrib (2012)** (5), **Emad Nashmi (2015)** (12), **Maisa Afifi (2015)** (3), **Tamir Garara & Samir Orabi (2013)** (8), **Sadek Al-Hayk & Kashef Zayed (2018)** (6), **Gamel Mahmoud (2015)** (11). All of them indicated the efficacy of traditional programmes in the practice of different swimming skills among novices.

Results presentation and discussion of the second hypothesis:

There are statistically significant differences between the pre and post estimations of the effect of blended learning using the blocked practice technique on the level of skill performance in front crawl and back crawl swimming among novices.

Table No. (8)

The pre and post estimations of the first experimental group (blocked practice) about the level of skill performance in front crawl and back crawl swimming

No = 10

Serial	Skill	Pre-estimation		Post-estimation		Mean differences	The value of (t)
		Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation		
1	Front crawl	6.5	0.71	7.6	0.69	1.1	4.7*
2	Back crawl	2.4	0.84	8.25	0.79	5.85	22.6*

*** Mean at the level of 0.05.**

Table No. (8) shows the pre-estimation and post-estimation of the first experimental group (blocked practice) about the level of skill performance in both front crawl and back crawl swimming. There are statistically significant differences between the pre and post estimations, indicating the increase in the post-estimation of the novices of the first experimental group who were trained using the technique of blocked practice.

The researcher ascribes the improvement in front crawl and back crawl swimming to the practice programme using the blocked practice method. This method led to the acquisition of the skills through training on leg stroke, then arm stroke, and afterwards matching them in a serial manner. Thus, blocked or serialized practice led to perfection and making the number of technical faults that may happen in the swimming so few. That is through the retention and recalling of the technical phases of the skill, in addition to the development of the physical fitness elements related to the skill.

These results agreed with those of **Red et al., (2018)** (19) Thus, the study indicated that blocked practice with low interference was better in practice of swimming skills.

Results presentation and discussion of the third hypothesis:

There are statistically significant differences between the pre and post-estimations of the effect of blended learning, using the random practice method on the level of skill performance in front crawl and back crawl swimming among novice swimmers.

Table No. (9)

The pre and post-estimations of the second experimental group (random practice) about the level of skill performance in front crawl and back crawl swimming

No = 10

Serial	Skill	Pre-estimation		Post-estimation		Mean differences	The value of (t)
		Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation		
1	Front crawl swimming	6.5	1.8	7.9	6.8	1.4	6.33*
2	Back crawl	1.8	0.78	6.8	1.2	5	11.2*

*** Mean at the level of 0.05.**

Table No. (9) indicates the pre and post-estimations of the second experimental group (random practice) about the level of skill performance in front crawl and back crawl swimming. There are statistically significant differences between the pre and post-estimations, showing a rise in the post- estimation among novice swimmers of the second experimental group, trained using the random practice method.

The researcher ascribes the improvement in front crawl and back crawl swimming to the training programme using the random practice method, which led to the acquisitions of the skills. That was through training on leg stroke and arm stroke together, being matched and adapted together using the method of random repetitions. However, each skill was repeated in performance once at most. So the random practice helped perfection and decreased the probability of the technical faults happening in the swimming. That was through the retention and recalling of the skill, in addition to the physical fitness elements related to the skill

These results agreed with those of the studies of **Sobhi Nour Addin & Yasir Abdel Fattah (2016)** (13) and **Bashair Sallal & Hatim Ibrahim (2019)** (14). All agreed that random practice with high interference was better in teaching sport skills.

Result presentation and discussion of the fourth hypothesis:

There are statistically significant differences between the traditional practice and blocked and random practice methods concerning the level of skill performance in front crawl and back crawl swimming among novice swimmers in the post-estimation.

Table No. (10)

Monomial contrast analysis between traditional method practice and blocked as well as random practice methods about the level of skill performance in front crawl and back crawl swimming

No = 10

Serial	Skill	Source of	Sum of	Degree of sum	Mean of sum	The value

		contrast	squares	of squares	of squares	of (F)
1	Front crawl swimming	Between groups	1.2	2	0.63	0.79
		Within group	21.7	27	0.8	
		Total	22.7	29		
2	Back crawl swimming	Between groups	30.3	2	15.17	15.5
		Within group	26.3	27	0.97	
		Total	56.6	29		

*** Mean at the level of 0.05.**

Table No. 10 indicates the monomial contrast analysis between the traditional method practice and practice using both blocked and random methods on the level of skill performance in front crawl and back crawl swimming. There are statistically significant differences among the three groups: The group that practiced using the traditional method, the one that practiced using the blocked practice method and the one that trained using the random practice method.

To know the directions of these differences, we use the test of post-comparisons of differences to show the least sensible difference (L.S.D). This is shown in table no. (11).

Table No. (11)

The mean of differences between the first experimental group (blocked practice) and the second experimental group (random practice) in the level of skill performance in back stroke.

N1 = N2 = 10

Serial	Skill	Experimental with blocked practice	Experimental with random practice	Blocked method and random method
1	Back crawl	-224	-1	1.45

*** Meaningful at the level of 0.05.**

Table No. (11) indicated the mean of differences between the first experimental group (blocked practice) and the second experimental group (random practice) in the level of skill practice of back crawl swimming. There are statistically significant difference showing that the first experimental group (blocked training) and the second experimental group (random training) are better than the control group. Moreover, there are statistically significant differences showing the first experimental group (block training) to be better than the second experimental group (random training) in the skill performance of backstroke.

The table indicates no statistically significant differences in the level of skill performance of front crawl swimming between the three groups. There is a difference in the skill performance of back crawl showing the superiority of the blocked and random practice groups over the control group.

The researcher ascribes these findings to the fact that the practice within the programme for the first and second experimental groups contributed to the motivation of the novices. Moreover, using the verbal method through the adequate medium led to achieving a greater feedback (output) in the training process, which made the novice more vivid and active during practice.

There were statistically significant differences showing the first experimental group (blocked practice) to be better than the second experimental group (random practice).

The researcher ascribes that to the fact that the stroke in back crawl swimming involves matching arms and legs in motion. Thus, it is preferable to teach leg strokes, and then arm stroke, and afterwards linking them and giving the practices concerning that. That was really done among the novices of the first experimental group (blocked practice). They received a training programme using the low interference blocked or serial practice.

Conclusion and Recommendations:

Conclusion:

Through the presentation of the aim and hypotheses of the research, as well as the presentation of research results, the researcher concluded the following:

1) Using the traditional practice programme has a positive effect in improving the level of skill performance in both front crawl and back crawl among novices.
2) Using the practice programme with both blocked and random practice has a positive effect in improving the level of skill performance in both front crawl and back crawl among novices.

Recommendations:

Through the findings that the researcher had concluded, he recommends what follows:

1) Using the blocked practice method for the sport skills in which interference in tasks is low and motion is recurrent, such as swimming skills.

2) Using the blocked practice method for the sport skills in which interference in tasks is high, such as swimming skills.

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