

Effects of Feedback frequency based on qualitative analysis on learning back roll balance in gymnastics

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Introduction and research problem

In motor learning and control researches that are made and verified now appear three modern theories (Figure 1), namely: (Blocked vs. Random practice, giving feedback after each attempt for reducing the number of times to give feedback, learning by teacher vs. self-learning) and the use of these methods and techniques affects learning motor skills and all agree that there is a technique used by the teacher / coach during the process of psychomotor skills education helps in learning the skill quickly and temporarily and its effects appear during the training / educational unit acquisition where learning the skill becomes faster. But, After at least 24 hours after the training / educational unit the

performance of the learned skill is reduced where they are forgetting performance skill as it has been learned the time of the training / educational unit (training sequence, giving feedback reactionary after each attempt, learned by teacher), while using other methods slows the process of learning motor skills during training / educational unit and the impact this process would stay in sensory memory for long. This is evident when testing the conservation and transmission of impact after more than 24 hours on the process of learning (training random – reducing feedback, self-learning). Vickers 1994, Sobhi ata 2005, Marschal etal2007, wiemeyer1997

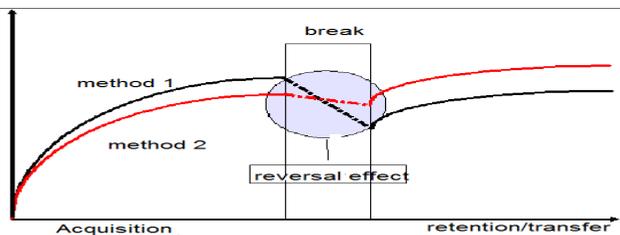


Figure (1) reversal effect

For achieving the motor learning as well as learning the sports skills efficiently reaching the

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optimum performance, the performing individual has not only to repeat practicing during acquisition stage, but also learning is greatly influenced by the information contained him by feedback in terms of knowledge of results (KR) or knowledge of performance (KP), and in many cases the trainer/ teacher change the timeliness and accuracy, and the number of times, and the type of knowledge of the results of learning in order to be more effective and brought good results during and after the process of learning motor skills. The different studies conducted in the field of feedback in the way giving (verbal - visual - a sense of mobility) feedback, as well as giving the number of times and how to organize the supply of player information which enhances the learning process during (educational / training unit. In this context, many of the studies reached the findings and recommendations in the field of feedback such study (Magill, 2001); Wolf, 1992), and private studies that recommended on the basis of evidence that reveal the impact of reversal effect (Vickers, 1994; Wiemeyer, 1998). The

reversal effect is to minimize the feedback given to the individual who is learning the mobility skill contributes to install this motor skill in long-term memory and this skill can be called effectively in phases of conservation and transmission of impact

The motor analysis is considered an accurate scientific way that gives honest indication for feedback and helps in the accurate detection and rapid different variables motor performance, thus the coach helps the player to develop the educational process to get to the best level for the purpose of correcting and enhancing responses kinetic learners.

In this regard, Talha Husamettin 1994 refers to that technical information about any skill means understanding how performance in the light of some audio or visual information, which helps to determine the kinetic actions required achieving this performance with the highest possible efficiency and with minimal effort

It should be noted that the Arab Studies conducted in this regard focused on measuring the impact of

providing learners with feedback in all its forms at the stage of learning or training phase or the so-called acquisition stage and many of these studies omitted to measure the impact of feedback in the stages of Retention and Transfer after the end of the learning process, not less than 24 hours was to prove that providing the learner with feedback (immediate) in all its forms improves the level in the acquisition stage, some of these studies are Shaker Sheikhly 2010, Mahmoud Haswa 2003, Mona Mostafa 1999 , al-Banna 1996, Blalock, K. & Gorging, N. (1995) Brinko K. (1993) as well as the studies that have been used to provide the learner with feedback supported by analysis motor (qualitative and quantitative) have had a positive impact on the learners in the acquisition stage, some of these studies are Mohammed Ramzi, Gamal Emam 2007, Aldalwy & alemrishvaoy 2006 Mohammed Abdel Razek 2002, Kamel Qansuh 2001, and between these studies, such as Manal Taha 2004 were comparable between the immediate feedback and

deferred where it is proved that immediate feedback allows the learner better results from deferred feedback but were measured in stage acquisition only and is not at the stage of the Retention and Transfer of impact

The results of The Meta-Analysis for 40 study conducted in the field of feedback (Marschal, Bund & Wiemeyer 2007), showed that the reduction of giving feedback during acquisition (during learning the skill) improves keeping the skill in sense mobility memory to longer period of time of giving feedback after each attempt during the learning phase, based on the results of this study, as well as studies conducted in the field of motor learning and control, this study was conducted to verify the application of the results of these studies and researches during learning back roll balance skill, as it is one of the gymnastics skills, which takes a long time during the learning phase and also requires to master this skill and recalling it after long periods of learning where gymnast needs to train on saving and retrieving skills in kinetics sentences for

several years to be prequalified on international levels.

Aim of this research

This research aims to identify the impact of Times of feedback learned from the results of the kinetic analysis to learn the skill of back roll balance and achieving the aim of the research by achieving the following objectives:

1. Qualitative analysis of the skill of back roll balance to determine the most important errors that may occur during the performance with a design model to identify these errors and coding them as well as identifying information that can be used to correct every mistake of these errors.
2. Video analysis of the skill by using shablone analysis form designed by the researcher to evaluate this skill.
3. Measuring the level of learning the skill of back roll balance according to the percentage of giving feedback after each attempt during the training period to learn the skill and know the effect of it in the two phases of Retention and Transfer.

Research procedures

Research Methodology: the researcher used the experimental design; 3

experimental groups for its appropriateness to the nature of the study.

The research sample

The sample was selected of students of the Second Division, Faculty of Physical Education, Mansoura University, and the 50 students are not taught the skill in question in the first year were divided into 3 experimental groups (15 students per group) and a number of 5 students was conducted a pilot study. The students were divided into three groups according to the handstand test results as each student did 3 attempts to handstand skill as one of the tests of the skill to divide the sample into three groups were video photographed with an analysis of the best bid and then students were arranged by grades. They got from largest to smallest, so students are placed in groups intentionally according to the grades obtained by each student in the stand on the hands test so that the total score obtained by the students in each group are equal. The following table shows the division of the research sample into three groups Borzt & Doering 2006 (١٨)

The sample was divided into 3 experimental groups: the first group (1) is giving feedback after each attempt (100%) of the attempts, the second group (2) is give feedback after all attempts (50%), while the third group(3) are giving feedback after all 4 attempts (25%) of the number of attempts.

Steps to implement the experience:

Pilot study: the researcher conducted a pilot study on the number of 5 students to determine:

- The availability of the necessary tools for the training process.
- Training the assistants on how to use the coding model designed by the researcher to know the sample errors.
- How to give feedback according to the model designed for Player error (KP)
- Knowing the maximum number of attempts the member of the sample can perform before reaching fatigue (The researcher reached with the sample number that the number which can be played by individuals before the effect of fatigue is 20 attempts)

- Knowing where to place a video camera

Pre –test

These measurements were done before starting the program designed by the researcher. The sample was divided into three groups and after all of the sample performed handstand skill, as it is considered the entrance to learn the skill of back roll balance, noting that the sample members have no previous experience in this skill and all belong to the same age, mean = 18.57 years, and a standard deviation 0.95. Each student of the sample performed 3 attempts to handstand skill which were video filmed. The researcher analyzed and divided respondents into three equal groups in this variable according to the arbitrators of the skill assessment. Grades have been developed for all students on (EXCEL) then ordering them Descending with grading in the intentional way in 3 groups so that the sums of these scores for each group are equal. (Table √ Bortz & Doring 2006)

Application of the program

After the sample was divided into 3 equal groups in variable degrees of handstand

skill, the first group (100% feedback) performance of back roll balance skill in the unit per 20 iterations, so the teacher gave all students feedback after every attempt according to the errors that appear in the performance of each player (KP) training on this skill was repeated for 4 weeks, twice a week means that the total training units for this skill were 8 training units and complex iterations of this skill of 160 repeat, while members of the second group (50% feedback) were also doing the same performance of the first group and the same number of iterations but the teacher was giving feedback to each player (KP) after all attempts, 50% of the number of attempts. In the third group, teacher gave feedback by 25 % after every 4 attempts according to the errors that appear in the performance of the player. It must be noted that at the beginning of any unit all members of both groups performed public and private warm-up to this skill under discussion. At the end of each unit, each member of the sample did 3 attempts of the skill that was done in the unit to measure the level of learning through training units and

comparing the level of group members together during the performance as these skills were video filmed and analyzed through 2 juries (faculty members in the field of gymnastics). Questionnaires were used to analyze this skill by video, where skill scores were 20 degrees. The averages of the two juries were compared.

Analysis of Kinetic construction for the back roll balance skill according to Kassat1995 model for kinetic analysis

Kassat 1995 thinks that athletic movements must have a whole kinetic building consists of parts have a specific order. It is important and necessary for a movement in accordance with the physical laws of this movement. So, the Kassat model is looking for motor construction for each skill and trying to determine what type of movement, as well as to identify some mechanical characteristics which is composed of relationships from which to implement the movement, and the basis of this model depends on (reason - influence - the relations between the parts of the skill) (Action-Effect-

Relation) where he Kassat identifying movement variables within the framework of a unified resulted from the motor analysis of sport skills. Kassat suggested using these themes when analyzing any motor skill: the requirements and conditions for the implementation of movement, motor path analysis, analysis of the external environment in which the movement took place, the idea of solving motor duty in accordance with the natural laws, analyzing the type of movement, performed individual analysis. Applying these themes on the skill of back roll balance, we see the motor construction for this skill that can even be carefully analyzed and taken advantage of this analysis in evaluating the performance of this skill so that the coach or teacher understands the building of this movement; therefore, he can identify performance errors and give feedback to the player in the correct manner.

Figure (2) shows the motor

construction of the back roll balance skill according to the technical aspects drawn from the kinetic analysis of the skill, as well as references and scientific studies in the field of gymnastics. So, those in charge of teaching and training on the skill would be able to, through the following division, know the technical aspects of the skill and the most important technical points used in the education of skill as well as the feedback that can be given to the player during the learning process and also to evaluate performance. (Kassat1995 (23-24), Tillman 1992, (32) Ata 2009 (3). Both Knirsch 1983 (25), 1996 (24), Mittendorfer 1993 agree that extending the hip by extending the body is the most important point in the performance of the skill of back roll balance. Autorenkollektiv 1972 thinks that the extension of the joints of the arms depends on the speed of rolling and dynamic extending of the basin to resolve this motor duty.

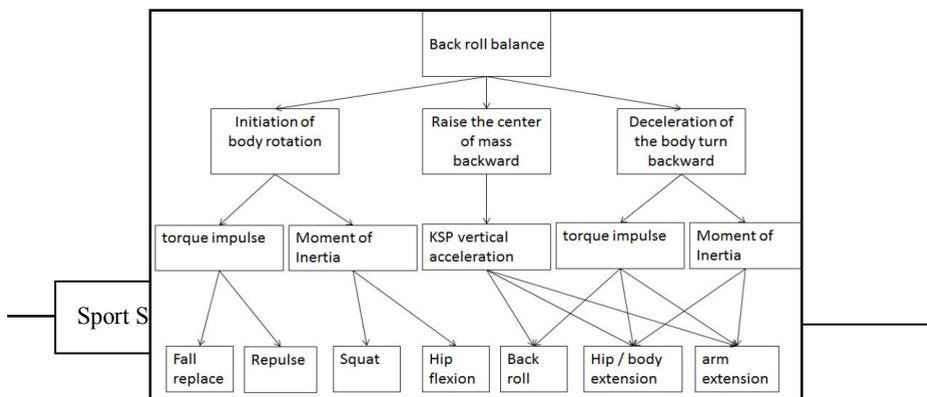


Figure (2) motor Construction of back roll balance skill, according to Kassat model

Through the qualitative analysis of the skill according to the Kassat1995 (24) the researcher suggests this model of qualitative analysis of the common errors and how to fix it in the back roll balance skill.

Table (1) analysis of the common errors expected when performing skill and details of these errors. The researcher has also designed coding for these errors recording them in form during the performance and then after the performance and completion of attempts required according to the

experimental design (after each attempt, after 2 attempt, after 4 attempts) to give appropriate feedback according to the error the coach / teacher recorded.

Table (1) shows the most important of these errors and coding proposed by the researcher to be easily used during training / educational unit by coach, as shown in Table (2) the information to be used by the coach / teacher during the unit according to the code that fits any errors made by the player during performing which the coach recorded during performance.

Error correction - hierarchy to back roll balance:

Table (1)
Analysis sheet for error correction to back roll balance (for a trainer) and the meaning symbols based on qualitative Analysis and proposed feedback to this errors in accordance with the qualitative analysis of skill

N	Basic Error	Information about error	Symbol	proposed Feedback to errors
1	hip extension	bad timing	T	Stretch the hip later, ie, when the back is on the ground, so you come to a handstand in calm and you cannot fall backwards.
		Too early	1E	
		earlier than previous try	>E	
		too early, but later as the previous try	<E	
		Too late	1L	
		later than previous try	>L	
		too late, but earlier as the previous try	<L	
low dynamic	1D	Stretch hip explosive to allow the body more quickly and Top speed until the arms relieved.		
2	Primary (functional) characteristics / handstands and / or role	Too late placing the hands and the coordination with hip and arm extension	2HAL	Consider the handstand quiet, so you can balance easily
		able handstand by insufficient body tension	2HAV	Perform the movement with more tension in order to stabilize the body
		insufficient body tension during the movement	2BT	Holding the handstand quiet, so you easily can balance

Follow Table (1)
Analysis sheet for error correction to back roll balance (for a trainer) and the meaning symbols based on qualitative Analysis and proposed feedback to this errors in accordance with the qualitative analysis of skill

N	Basic Error	Information about error	Symbol	proposed Feedback to errors
		Hands are not parallel	2HAP	Put your hands parallel to roll directly and to convert the stretching movement in Handstand
		to low rolling speed	2RS	You must roll faster to time the correct extension.
		Knee not stretched during the roll	2KNS	Let the knee extension during the role to enable hip more dynamic extension
		Hands in the role too wide / clutching / abducts not enough was returned / too far placed	2HA<>	Set the hands of narrow / fat / abduction / stronger preturning to perform later dynamically arm extension
3	Secondary (form errors) characteristics / Handstand position	Elbows are not stretched	3ES	stretch the elbow to keep you more easily in the Position.
		Shoulder joints are not stretched	3SCHS	Complete the hips stretch to compete the technically "clean" handstand.
		Hip unstretched	3HIPS	Stretch the hips completely to compete the technically "clean" handstand.

Follow Table (1)

Analysis sheet for error correction to back roll balance (for a trainer) and the meaning symbols based on qualitative Analysis and proposed feedback to this errors in accordance with the qualitative analysis of skill

N	Basic Error	Information about error	Symbol	proposed Feedback to errors
		Knee not stretched	3KNS	stretch the knee joints completely.
		lack of ankle flexion (plantar flexion)	3LTOG	Consider the legs together while Handstand to compete the technically "clean" handstand
		Legs are not together	3ANKS	stretch ankles completely while Handstand to compete the technically "clean" handstand

propose assessment to Back roll balance

The researcher through the analysis of motor construction of the back roll balance skill designed Shablon to be used to assess the skill objectively after filming the

attempts. Also, the researcher designed a suggested analysis form (Table 4) through the kinetic analysis of the skill according to the Kassatt 1995 model that is would be used with Shablon to assess the skill of an objectively

Table (2)

video analysis back roll balance skill to stand on hands

Aspect	indicator	Evaluation
Timing of Hip extension	Body position in space of hip extension and end position of the hip joint (stretching under $160^\circ = 0$ point - when 90° - when $70^\circ \leq \alpha < 90^\circ$ - when $45^\circ < \alpha < 70^\circ$	5 3 1

Follow Table (2)
video analysis back roll balance skill to stand on hands

Aspect	indicator	Evaluation
Dynamics of hip stretching	Reprints from the arms (lack of dynamism)	If indicator is not present 5
Quiet Handstand	Unsteadiness	2
<input checked="" type="checkbox"/> Full body extension (only if Vertical reached approximately Allow $\pm 5^\circ$,	-Elbow angle: 180 °	1
	- Shoulder angle: 170 ° - 180 °	1
	- Physiological WS-attitude	1
	- Hips: 180 °	1
	- Knee: 180 °	1
	- Ankle: 180 °	1
	- Closed legs	1
	- Approximately parallel hands	1
Summe		20

How to use Shablon with the proposed evaluation form

1.All the skills that the researcher would evaluate would be video filmed and then viewed on TV.

2.Initially the resident watches the skill at normal speed where watching the movement of the pushing of the shoulders and representing a dynamic skill evaluation form If there is the movement of push from the shoulders the resident shall put 5 degrees

3.The Resident install image and returned it slowly and put Shablon on the screen (as shown in Figure 3) to note the timing of extending full trunk

and develops appropriate grades, according to the form of analysis. If extending full trunk of space on Shablon between angle 70 ° until 90 ° the resident gives 3 degrees But if an extending full trunk at 90 ° degrees the resident gives 5 degrees. If extending full trunk with angle between 45 ° and ° 70 degree then its 1 degree (see evaluation form and Shablon as well as the form (3))

4.If the player reaches a handstand without tension be given two degrees

5.In a standing position on hands allowed deviation of $\pm 5^\circ$ formal performance is

assessed and for the development of extending joints in the proper anatomical conditions as in the evaluation form

6. The total scores obtained by the player is the sum of what has been collected resulting from the grades given by the resident, according to the evaluation form and using Shablon and they would be 20 degrees

Post measurements

1 - Retention test

This test was conducted a week after the end of the last unit Delayed Retention Test. The members of the two groups performed 3 attempts for the skill in question, as the arithmetic average of results from the analysis of these skills have been compared to the results of the three groups.

Statistical treatments: The arithmetic mean and standard deviation, variance analysis for repeated measurements and Scheffe test were used to distinguish between the three groups.

Presentation and discussion of the results:

Through the application of the study and in accordance with the hypotheses that have been

imposed, the results were as follows:

1- The evolution of learning back roll balance skill during training / educational unit continuing education regardless of the frequency of giving feedback, where following tests for the level of learning the skill during training units were done. The 3 attempts for the whole sample were video filmed after tests (1-4-8-12) and analysis was video filmed in accordance with the valuation method described in this research. Arithmetical averages were calculated for each group and compared conducting the analysis of variance with repeated measurements to demonstrate the development of learning level of the back roll balance skill of the three groups. The researcher explained the results that all members of the three groups has evolved as they would learn the skill through the training units that have been taking measurements in (1-4-8-12) and this development was through the training units with statistically significant at the 0.05 level (table 3)

Table (3)
ANOVA test (F) among the three sample groups and within them
in consecutive tests to measure the level of learning the skill under
discussion during the training units

		Sum of Squares	Df	Mean Square	F	Sig.
Test1	Between Groups	20.800	2	10.400	8.029	.001
	Within Groups	54.400	42	1.295		
	Total	75.200	44			
Test2	Between Groups	74.133	2	37.067	15.778	.000
	Within Groups	98.667	42	2.349		
	Total	172.800	44			
Test3	Between Groups	71.115	2	35.558	15.335	.000
	Within Groups	95.067	41	2.319		
	Total	166.182	43			
Test4	Between Groups	71.644	2	35.822	17.631	.000
	Within Groups	85.333	42	2.032		
	Total	156.978	44			

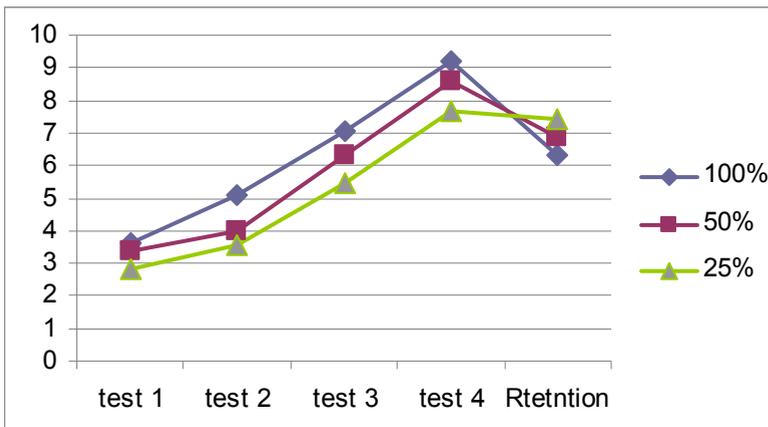


Figure (4) consecutive tests to know the skill level under discussion

For the second hypothesis of this study, which is (there are statistically significant differences among the three groups under discussion in the level of learning skill during the training / educational phase in favor of the first group (100%), then the second group 50%, followed by the third group (25%), analysis of variance with repeated measurement showed that there are statistically significant differences among the three

groups in the level of learning the skill as the results showed that the level of group members learning was done in different ways. as the scores averages obtained by individuals in each group showed that there are differences in the level of development of learning for each group (Table 4)

To indicate which of the three groups is better than the other Statistical testing was performed (scheffe) Table (4)

Table (4)
scheffe test to determine the above groups under discussion during the training units

Dependent Variable	(I) group	(J) group	Mean Difference (I-J)	Std. Error	Sig
Test1	100%	50%	.40000	.41557	.632
		25%	1.60000(*)	.41557	.002
	50%	100%	-.40000	.41557	.632
		25%	1.20000(*)	.41557	.022
	25%	100%	-1.60000(*)	.41557	.002
		50%	-1.20000(*)	.41557	.022
Test2	100%	50%	2.13333(*)	.55967	.002
		25%	3.06667(*)	.55967	.000
	50%	100%	-2.13333(*)	.55967	.002
		25%	.93333	.55967	.260
	25%	100%	-3.06667(*)	.55967	.000
		50%	-.93333	.55967	.260
Test3	100%	50%	1.46667(*)	.55602	.040
		25%	3.13333(*)	.56586	.000
	50%	100%	-1.46667(*)	.55602	.040
		25%	1.66667(*)	.56586	.020

Follow Table (4)
scheffe test to determine the above groups under discussion
during the training units

Dependent Variable	(I) group	(J) group	Mean Difference (I-J)	Std. Error	Sig
Test4	25%	100%	-3.13333(*)	.56586	.000
		50%	-1.66667(*)	.56586	.020
	100%	50%	1.20000	.52048	.082
		25%	3.06667(*)	.52048	.000
	50%	100%	-1.20000	.52048	.082
		25%	1.86667(*)	.52048	.004
25%	100%	-3.06667(*)	.52048	.000	
	50%	-1.86667(*)	.52048	.004	

* The mean difference is significant at the .05 level.

The results of scheffe testing showed statistically significant differences at the level of learning skill beginning of First post-unit in favor of the first group (100%) and the second group (50%) better than the third group (25%), while there was no statistically significant differences between level of learning the first group (100%) for the second group (50%)

By the end of unit 4, the results of scheffe testing showed that there are statistically significant differences in the level of learning skill for the first group (100%) compared to the second and third, while there is not any differences in the level

of learning skill among the second group (50%) and the third group (25%)

After the end of the unit 8, the results showed that there are statistically significant differences in favor of the first group in the level of learning skill for Group II and III, as well as statistically significant differences between the members of the group II and group III in the level of learning skill and in favor of the second group

After the end of the unit 12, the results showed that there are statistically significant differences among the members of the first group (100%) for members of the group III (25%), and there are

statistically significant differences between the second group (50%) and group III (25%) in favor of The second group, while results did not show any statistically significant differences between the first and second group

For the third hypothesis of the study, which states (there are statistically significant differences between the study groups in the Delayed Retention Test being a week after the last training / educational unit and in favor of any group the third group (25%) for the two groups first (100%) and second (50 %),

showed ONE WAY ANOVA showed that there are statistically significant differences among the three groups in the level of retention skill under discussion where arithmetic mean of the three groups decrease in the level of learning skill after a week of non-practice and the end of the training modules, that this decline statistically significant. Table (7) showed the results of ANOVA test between the three groups in the Delayed Retention Test, which was after the end of a full week training units.

Table (5)

ANOVA (F) among the three sample groups and within them in the Delayed Retention tests to measure the level of learning the skill in question in the post-test

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	34.133	2	17.067	6.251	.004
Within Groups	114.667	42	2.730		
Total	148.800	44			

And to indicate which of the groups was better at keeping skill level in the post test, scheffe test was conducted to determine this. The results were as in table (6) as follows:

There are statistically significant differences in favor of the third group (25%)

compared with the level of performance for the first group (100%) as it fell level learn the skill of the first group (100%) in the absence of training, while level learning of individuals of third group stabilized (25%) within the memory being called more

efficiently than in the case of the first group (100%), while the results showed no statistically significant

differences at the 0.05 level between the level of the first and second or between the second and third.

Table (6)
scheffe test to determine the differences among the three groups in question in the post-test

Dependent Variable	(I) group	(J) group	Mean Difference (I-J)	Std. Error	Sig
(Post-) Retention Test	100%	50%	-1.06667	.60334	.221
		25%	-2.13333(*)	.60334	.004
	50%	100%	1.06667	.60334	.221
		25%	-1.06667	.60334	.221
	25%	100%	2.13333(*)	.60334	.004
		50%	1.06667	.60334	.221

the current study agrees in the procedures in terms of giving feedback as a percentage of the number of attempts with the study Aldalwy & alemrishvawy 2006, used to provide learners with feedback at 100%, 50% using biomechanical curves to straight left punch. The results of this study showed that learners of 50% feedback were better educated more than 100%. The results of, Golec, 2003, Carnahan 1996, Ripoll & etal, 1995, Blischke etal, 1995, Wulf 1992, Shmidt 1990 agree with the results of this study, as the results of the present study agreed with the results of these

studies that minimize the feedback useful in learning sport skills (back roll balance skill), that giving learners feedback with significant proportions or after each attempt reduces increasing the level of skill during learning, but after at least 24 hours without training appeared what called Reversal Effect which Vickers1994 spoke about it. The results of studies carried out by Magill2001 and wiemeyer 1998 agreed with him that they have been confirming this effect in the motor research learning conducted by Marshal, wiemeyer & Bund (2007) as

Meta-Analysis study of a number of 40 studies in feedback that proved to minimize the feedback may hinder the process of learning the skill at the beginning or during the training units. In stage of retention and transmission of impact showed the adverse impact which Vickers1994 proved and supported the results of this study in the light of the third hypothesis of this study. As these Studies showed that mental processes associated with the motor performance would be in the top grades at reducing the given feedback as the individual depends on giving feedback after every attempt to coach or teacher so that those operations in less degree and thus when acts of these operations during the two phases of the retention and transmission after training the individuals who have been reducing feedback as they can easily through the mental processes they trained on call the skill from the sensory memory.

Conclusions:

In light of viewing the results and the discussion, the researcher concludes the following:

- Using feedback in any form working to improve the level of learning motor skills (back roll balance skill).
- Giving feedback after every attempt during motor skill learning benefit from the temporal learning of in and during the training unit and inhibits the process of retaining the impact of learning these skills after training units.
- Giving feedback of few percentages during training units slows down the process of learning motor skills during the training units but it is useful in the process of the keeping effect of this skill in the long motor memory and easily recalling the skill after training units.

Recommendations:

In light of the objectives of the study and its findings the researcher recommends the following:

- Using of qualitative analysis of the skills as a means to give feedback.

- Reducing the rates of giving feedback when teaching motor skills because of its great benefit in the process of recalling after the completion of the learned skill.
- Conducting studies on ratios of feedback during the learning phase on different skills of gymnastics skills and other sports
- Conducting similar studies to compare the effect the results of this study reached on the age and gender.

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