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Effects of an Animation Program on Acquiring some Basketball Attack Skills for Mentally Retarded.

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Abstract

The current research aims at designing a recommended program to increase the functional efficiency of the frozen The current research aims to design an animation program for mentally retarded persons and to identify its effects on acquiring basketball attack skills. The researcher used the Experimental Approach (one-category design) with pre-, within, and post-measurements. Research's community (n=60) included all students of El-Tarbia Al-Fikria School,Tanta, who were registered for the academic year 2013-2014. Only (20) students were purposefully chosen as a sample for this research. The researcher used (4) physical tests and (3) technical tests. Results indicated the following:

1- *The recommended animation program helped mentally retarded person to acquire basketball attack skills.*
2- *Learners' involvement in the educational units led to increasing the improvement rate of technical performance for basketball attack skills under investigation.*
3- *The recommended animation program was very attractive for learners and increased their excitement to see the basketball attack skills.*

Keywords: Basketball Attack - Animation - Mentally Retarded.

Introduction:

Mental retardation is a major social, psychological, educational and medical phenomenon along the human history. Its effects are clear nearly in all societies. It is an educational problem that needs educational intervention to identify specific approaches and methods to deal with it. Its psychological and behavioral aspects are clear in maladaptive behaviors of mentally retarded persons in addition to its behavioral consequences leading to major differences between this sector of individuals and their normal counterparts in physical, mental and emotional characteristics. This indicates the need for designing and implementing new curricula, programs and subjects that are totally different to fulfill the needs of this sector of individuals. According to UNICEF statistics, nearly (10) million children all over the world are unable to involve in normal daily life activities due to their auditory, visual, mental or psychological disabilities (28: 137).

Positive values of practicing sport as a cure for diseases and disabilities are well documented in human history. Movement has positive effects in treating various diseases over various age stages and for normal and disabled persons as well. It is the best way to preserve health, fitness and functional ability. Governments are now interested in caring for and rehabilitating disabled persons through various governmental and non-governmental agencies. These agencies provide various sports and recreational activities. The sports field is very rich with various activities suitable for disabled persons. Practicing these activities should be egalitarian among all types of disability so that the disabled person may benefit from physical, psychological, therapeutic, motor and ethical aspects as the disabled person should respect other team mates, opponents, judges and officials and rules of the game. This fine tunes the athlete and his/her abilities (19: 45)

Disabled children deserve all types of motor activity. If the importance of motor activity is agreed upon for normal individuals, this importance is far more significant for mentally retarded persons as they need movement for improving their physical and functional fitness in addition to their cognitive abilities and self-confidence. This decreases the negative effects of mental retardation and increases the opportunities for adaptation and integration into normal society (9: 5).

Special education schools are educational institutes where disabled persons learn and acquire various physical activities. Its curricula and programs concentrate on fulfilling children's needs according to their mental age and performance level. Physical education curricula are not less important than any other subject as sports activities are very important in changing disabled children's lives.

Curricula of disabled children are totally different from those directed to normal children considering preparation and methods of teaching. Normal curricula are pre-prepared by a specialized committee while disabled curricula are designed as main headlines. But the major

problem is that handicapped persons think of themselves as less capable than normal persons. Therefore, it is necessary to deal with them carefully while choosing methods of teaching, program contents and ways of skills performance. These factors should be exiting and easy to acquire as handicapped persons usually acquire information gradually as their levels of thinking, attention and recall are different from their normal counterparts. This leads to different levels of cognitive processes as handicapped normally learn simple processes that need sensory thinking first while complex processes need abstract thinking. In addition, learning some skills happens according to their potentials, capabilities and aptitudes (13: 116) (23: 323)

Animation facilitates learning through providing more vivid pictures for skills to be learned. Various research works indicate its effectiveness in teaching and training in addition to being an urgent need for improving individuals with disabilities and turning them from negative to positive learners. These works include Ali Abd Al-Mageed (1996) (1), Mona Mohamed (2000) (21) and Abd El-Rahman & Azmi (2001) (5). Results of these studies indicated the importance of teaching aids (pictures – graphs – video – animation – programmed learning – feedback) if they clarify the technical performance of a motor skill in addition to attracting learners' attention, especially handicapped.

Basketball provides mentally retarded persons with cooperative team activities through communicating with teammates and audience. It fulfills a lot of the requirements of psychological, mental and social growth in addition to increasing self-confidence and confidence in coach. It makes mentally retarded persons appreciate the value of cooperation. Sensory motor coordination is the first step of intelligence. Therefore, it works on providing mentally retarded with balanced education. Al-Roaidy & Mardiny (1994) (10), Hassan (1997) (18), Rateb, Maree, & Abd El-Wahab (2003) (24), Abd El-Hakeem (2010) (2) and Abd El-Salam (2012) (7) indicated that various psychological, social or physical programs provide handicapped persons with basketball skills.

Mentally retarded persons need to repeat technical performance from various angles and distances as repetition improves their abilities to remember and recall educational experiences and relations among things. This is done through attracting learner's attention and helping him/her to concentrate on learning and neglect other unsuitable factors and stimuli. It provides simple tasks (skills) like grapping the ball and then moving to the next skill which is passing (chest – rebound) then shooting. This is done on a step-by-step basis as most mentally retarded persons have limited abilities. This led the researcher to try to find an effective tool for achieving these requirements for teaching mentally retarded persons the basketball attack skills. The researcher chose animation as it is suitable for this category in addition to including all requirements for dealing with mentally retarded persons. According to the researcher's knowledge, there are no previous studies dealing with this category used animation.

Aim:

The current research aims to design an animation program for mentally retarded persons and to identify its effects on acquiring basketball attack skills.

Hypotheses:

1. There are statistically significant differences among the pre-, intermediate and post-measurements of attack skills performance for mentally retarded persons who use the animation program in favor of the post-measurements.
2. There are statistically significant differences among the pre-, intermediate and post-measurements on the improvement percentage of attack skills performance for mentally retarded persons who use the animation program in favor of the post-measurements.
3. There are statistically significant differences among the pre-, intermediate and post-measurements on evaluation of attack skills performance for mentally retarded persons who use the animation program in favor of the post-measurements.

Approach:

The researcher used the experimental approach (one-category design) with pre-, intermediate and post-measurements.

Participants:

Research community (n=60) included all students of Al-Tarbia Al-Fikria School in Tanta who were registered for the academic year 2013-2014. Only (20) students were purposefully chosen as a sample for this research (33.3% of research community). Participants were chosen according to the following criteria:

1. All of them were able to learn but slower than their normal counterparts with IQ between 50-75% and age between 13-15 years.

2. All of them are free of any diseases that may hinder their performance

Table (1):
Sample Description on Basic Variables (n=30)

Variables		Measurements	Mean	Median	S.D.	Flatness	Squewness
Growth Factors							
1	Age	Year / moth	14.11	14.00	0.53	0.54-	0.84
2	Height	CM	1.50	1.52	0.07	0.31	0.91-
3	Weight	KG	53.80	54.50	6.61	0.07	0.08-
Physical Variables							
1	Throwing towards a target	Point	12.37	12.50	1.90	0.07	0.73-
2	Zigzag run	Point	6.03	6.00	1.00	0.06-	0.07-
3	50m run	Sec	17.90	18.00	1.60	0.14-	0.23
4	Speed and agility	Rep	6.80	7.00	0.96	0.17	0.68
Technical variables							
1	Ball handling	Point	2.23	2.00	0.97	0.91-	0.22
2	Passing	Point	1.00	1.00	0.69	0.79-	0.00
3	Shooting	Point	3.57	4.00	1.14	1.37-	0.10-
Evaluation of technical performance							
1	Ball handling	Point	2.03	2.00	1.00	0.47-	0.74-
2	Passing	Point	1.10	1.00	0.76	1.19-	0.17-
3	Shooting	Point	1.73	2.00	0.98	0.42	0.58

Table (1) shows mean, median, S.D., flatness and squewness of basic variables under investigation. Squewness and flatness values ranged between (3±). This indicates that data is free of radical distributions.

Data Collection Tools:

Equipment:

A basketball court – basketballs – measuring tape – stop watch – computer lab – (20) CDs containing the recommended program (annex 2)

Growth Factors:

1. Age: according to school records
2. Weight: with a medical balance
3. Height: with a rest meter

Mental Abilities:

The researcher recorded IQ according to school logs as Stanford-Binet IQ test is among the requirements of registering in these schools. IQ was between 50 and 70% for students who are able to learn.

Physical abilities tests:

According to review of literature (9) , (2) and PE Teacher's Guide for Special Education Schools and Institutes, the researcher chose the following tests:

Throwing towards the target – zigzag running – 50m running – speed and agility tests

Attack skills tests:

According to PE Teacher's Guide for Special Education Schools and Institutes, the researcher chose the following tests:

- Ball handling (walking with ball for 24m)
- Passing (chest - rebound)
- Shooting (shooting to basket)

Technical performance level:

The researcher evaluated the technical performance level through attack skills tests. performance evaluation logs especially designed for this category according to PE Teacher's Guide for Special Education Schools and Institutes.

Basketball performance log:

The researcher used the logs especially designed for this category according to PE Teacher's Guide for Special Education Schools and Institutes. Validity and reliability of the logs were calculated through applying them to a pilot sample (n=3) from the same research community and outside the main sample.

Validity and reliability of physical abilities tests:

1- Validity: the researcher used the distinguished validity on a pilot sample (n=20) from the same research community and outside the main sample as shown in table (2).

Table (2):
Difference Significance between Upper and Lower Quartiles of Physical Tests (n=20)

Physical Tests		Upper quartile n=5		Lower quartile N=5		Mean differences	(t) Value
		Mean	SD±	Mean	SD±		
1	Throwing towards a target	14.75	1.21	8.32	1.46	6.43	6.77
2	Zigzag run	6.55	0.47	4.63	0.52	1.92	5.49
3	50m run	16.84	1.38	21.56	1.75	4.72	4.25
4	Speed and agility	8.36	0.87	5.78	0.74	2.58	4.53

(t) Table value on P≤0.05 = 2.30

Table (2) shows the difference significance between upper and lower quartiles of physical tests. These values indicate validity of tests.

2- Reliability: the researcher used the test/retest procedure on a pilot sample (n=20) from the same research community and outside the main sample as shown in table (3)

Table (3):
Correlation coefficient between test and retest of physical tests (n=20)

Physical Tests		Test		Retest		Correlation Coefficient
		Mean	SD±	Mean	SD±	
1	Throwing towards a target	11.62	1.89	11.83	1.67	0.89
2	Zigzag run	5.56	0.87	5.71	0.75	0.93
3	50m run	19.30	3.12	19.18	2.68	0.87
4	Speed and agility	7.11	1.23	7.31	0.88	0.90

(R) Table value on P≤0.05 = 0.44

Table (3) shows statistically significant correlations between test and retest of physical tests. This indicates tests reliability.

Validity and reliability of technical tests:

1- Validity: the researcher used the distinguished validity on a pilot sample (n=20) from the same research community and outside the main sample as shown in table (2).

Table (4):
Difference Significance between Upper and Lower Quartiles of Technical Tests (n=20)

Tests		Upper quartile n=5		Lower quartile N=5		Mean differences	(t) Value
		Mean	SD±	Mean	SD±		
1	Ball handling	4.57	0.72	2.11	0.64	2.46	*5.12
2	Passing	2.88	0.41	1.04	0.36	1.84	*6.81
3	Shooting	7.47	0.89	3.52	0.78	3.95	*6.58

(t) Table value on P≤0.05 = 2.30

Table (4) shows the difference significance between upper and lower quartiles of physical tests. These values indicate validity of tests.

2- Reliability: the researcher used the test/retest procedure on a pilot sample (n=20) from the same research community and outside the main sample as shown in table (5)

Table (5):
Correlation coefficient between test and retest of technical tests (n=20)

Physical Tests		Test		Retest		Correlation Coefficient
		Mean	SD±	Mean	SD±	
1	Ball handling	3.29	0.85	3.45	0.78	*0.89
2	Passing	1.89	0.67	1.94	0.86	*0.91
3	Shooting	5.53	1.35	5.64	1.16	*088

(R) Table value on P≤0.05 = 0.44

Table (5) shows statistically significant correlations between test and retest of physical tests. This indicates tests reliability.

1- Validity: the researcher used the distinguished validity on a pilot sample (n=20) from the same research community and outside the main sample as shown in table (6).

Basketball performance evaluation log: (annex 1)

Table (6):
Difference Significance between Upper and Lower Quartiles of Evaluation Log (n=20)

Tests		Upper quartile n=5		Lower quartile N=5		Mean differences	(t) Value
		Mean	SD±	Mean	SD±		
1	Ball handling	4.55	0.78	1.85	0.64	2.70	*5.02
2	Passing	3.12	0.65	1.12	0.51	2.00	*4.88
3	Shooting	6.75	1.23	1.55	1.56	5.20	*5.25

(t) Table value on P≤0.05 = 2.30

Table (6) shows the difference significance between upper and lower quartiles of evaluation log. These values indicate validity of log.

2- Reliability: the researcher used the test/retest procedure on a pilot sample (n=20) from the same research community and outside the main sample as shown in table (7)

Table (7):
Correlation coefficient between test and retest of evaluation log (n=20)

	Physical Tests	Test		Retest		Correlation Coefficient
		Mean	SD±	Mean	SD±	
1	Ball handling	3.20	1.07	3.28	1.24	*0.90
2	Passing	2.12	0.84	2.23	0.64	*0.92
3	Shooting	4.15	1.86	4.27	1.65	*0.87

(R) Table value on P≤0.05 = 0.44

Table (7) shows statistically significant correlations between test and retest of evaluation log. This indicates log reliability.

The recommended animation program: (annex 2)

The researcher designed the program considering the following characteristics:

1. **Creative Drawing:** The animation designer is concerned with clarifying various things and elements in the frame so that it becomes comprehensible and communicable from the first moment. Creative drawing expresses skills under investigation. It is the communication channel between the designer and students. It is the visual factor affecting the learner's attention to the skill (ball handling – passing – shooting) in addition to analyzing skills and confirming credibility of the work done.

2. **Movement Sides:** This means how to translate learning steps of each skill into pictures. This includes formation, tempo, movement, balance, duration, camera angles and vision angles. Animation character is very important as cohesion of its lines and final form in addition to harmony of costumes and colors contribute in learner's comprehension.

3. **Thoughts and Emotional Process:** Animation films consider the emotional and mental status of its audience. It considers the force exercised over the body, situation of the animated element and expressions of characters. All these factors provide the animated character with its behavior.

4. **Staging, Timing and Synonyms:** On-screen duration of each frame and its relation to previous and next frames is very important. Behaviors and assertive pauses should be suitable for the importance of each character on screen. Frame size is considered as variation of character position and movements (walking – running – ball skills) are very important.

5. **Anticipation:** It is very important as it prepares the stage for the event to be introduced.

6. **Dialogue Phrasing:** Emotional status and body posture of the characters are basic characteristics for convincing expression and good synchronization of performance. If the character's body fails to represent the technical performance of the skill, it will lose its credibility in the eyes of the learner.

7. **Tempo:** Tempo is critical for moving elements, characters, frame sequence, color, fix cadres expressive situations of motor performance and timing. Animation films can use color, line and shape effectively on screen (33: 128)

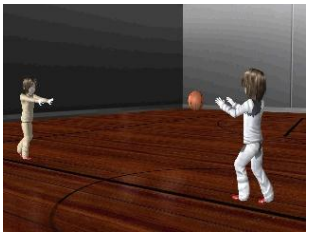
The program was copied on a CD and the "Auto-Run" feature was added. The researcher narrated the technical performance steps for clarification and explanation. For the purposes of application, the researcher copied the program on (20) CDs. Figures (1), (2), (3) and (4) show some windows of the program. These windows show the ways of technical performance accompanied with voice narration. Presentation can be slowed down or accelerated from the tool tape.

(1)

(2)

(3)

(4)



(5)

Fig (1) Chest Pass

(1)

(2)

(3)

(4)

Fig (2) Rebound Pass

(1)

(2)

(3)

(4)

(5)

(6)

Fig (3) Ball Handling

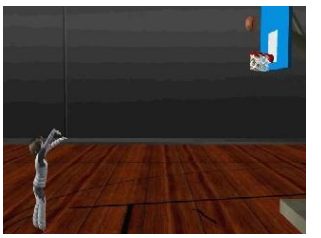
(3)

(2)

(1)

(4)

(5)



(6)

Fig (4)

Program Content:

According to review of literature (9) (13) (10) (20) (16) (12) (11) and PE Teacher's Guide for Special Education Schools and Institutes, the researcher identified the best ways for initiating the recommended program. All administrative and applied aspects were considered. The program was explained carefully to those who will initiate it. Characteristics of this category of handicapped (physical – motor – emotional – cognitive) were also explained. The program content includes the following:

- Objectives for each unit are included.
- Content depends on watching animation and actual application of skills instead of prolonged explanations.
- Drills for each skill were simple and matching what is presented in the animation.
- Each drill is repeated several times to insure improvement of performance level.
- Rest intervals among drills are considered. This improves the effectiveness of the program.

Pilot Study:

The researcher performed a pilot study on a pilot sample (n=10) from the same research community and outside the main sample from 23/9/2014 to 24/9/2014. This study aimed to identify:

1. The accuracy and inclusiveness of the program
2. The ability of participants to understand what is presented to them
3. The ability of participants to apply mental drills for skills inside the court
4. The validity of computers and compatibility to present animations
5. The availability of alternative power supplies in cases of black-outs
6. The standard duration of presentation so that it does not affect the rest of the unit

The researcher confirmed the effectiveness of the program and its suitability for participants.

Main Study:

1. **Pre-measurements:** pre-measurements were taken from 1/10/2014 to 2/10/2014
2. **Application:** the recommended program was applied to the main sample (n=20) from 5/10/2014 to 28/12/2014 (3 months). The program was applied in the computer lab for watching sessions (10 minutes) then on the school yard for actual application (15 minutes). Table (8) shows the content of the program. Annex (3) shows a sample unit of the program.

Table (8):
Content of the Recommended Program

Program Components	Program Contents
Weeks	12
Units	12
Duration of unit	45 min
Duration of program	300 min

3. **Post-measurements:** post-measurements were taken from 29/12/2014 to 30/12/2014

Statistical Treatments:

The researcher used SPSS software to calculate the following:

Mean – Median – S.D. – Correlation Coefficient – Validity –skewness–kurtosis– (t) Test – Improvement Percentage

Results:

Table (9):
Variance Analysis of the three measurements (pre-/intermediate/post-)
for participants on the technical tests under investigation (n=20)

Technical tests		Source of variance	Degree of freedom	Sum of squares	Mean of squares	F
1	Ball handling	Inter-measurements	2	290.400	145.200	*162.579
		Intra-measurements	87	77.700	0.893	
		Sum	89	368.100		
2	Passing	Inter-measurements	2	106.667	53.333	*129.488
		Intra-measurements	87	35.833	0.412	
		Sum	89	142.500		
3	Shooting	Inter-measurements	2	432.017	216.008	*226.123
		Intra-measurements	87	83.108	0.955	
		Sum	89	515.125		

(F) Table value on freedom degrees of (2) and (87) and P≤0.05 = 3.11

Table (9) indicates statistically significant differences among pre-, intermediate and post-measurements on technical tests. This led the researcher to perform L.S.D. tests for the most accurate difference significance.

Table (10):
The Most Accurate Difference Significance Among the three measurements (pre-/intermediate/post-) for participants on the technical tests under investigation (n=20)

Technical tests		Measurements	Means	Means differences			L.S.D
				Pre-	Intermediate	Post-	
1	Ball handling	Pre-	2.23		*2.10↑	*4.40↑	0.48
		Intermediate	4.33			*2.30↑	
		Post-	6.63				
2	Passing	Pre-	1.00		*1.57↑	*2.67↑	0.33
		Intermediate	2.57			*1.10↑	
		Post-	3.67				
3	Shooting	Pre-	3.57		*2.88↑	*5.36↑	0.50
		Intermediate	6.45			*2.48↑	
		Post-	8.93				

Table (10) indicates that the most accurate difference significance among the three measurements was in favor of the post-measurement.

Table (11):
Improvement Percentages Among the three measurements (pre-/intermediate/post-) for participants on the technical tests under investigation (n=20)

Technical tests		Measurements	Means	Improvement percentages %		
				Pre-	Intermediate	Post-
1	Ball handling	Pre-	2.23		94.17	197.31
		Intermediate	4.33			53.12
		Post-	6.63			
2	Passing	Pre-	1.00		157.00	267.00
		Intermediate	2.57			42.80
		Post-	3.67			
3	Shooting	Pre-	3.57		80.67	150.14
		Intermediate	6.45			38.45
		Post-	8.93			

Table (11) shows improvement percentages among the three measurements on technical tests under investigation.

Table (12):
Variance Analysis of the three measurements (pre-/intermediate/post-) for participants on the technical evaluation under investigation (n=20)

Technical tests		Source of variance	Degree of freedom	Sum of squares	Mean of squares	F
1	Ball handling	Inter-measurements	2	236.017	118.008	*115.736
		Intra-measurements	87	88.708	1.020	
		Sum	89	324.725		
2	Passing	Inter-measurements	2	120.417	60.208	*128.359
		Intra-measurements	87	40.808	0.469	
		Sum	89	161.225		
3	Shooting	Inter-measurements	2	640.267	320.133	*220.811
		Intra-measurements	87	126.133	1.450	
		Sum	89	766.400		

(F) Table value on freedom degrees of (2) and (87) and P≤0.05 = 3.11

Table (12) indicates statistically significant differences among pre-, intermediate and post-measurements on technical evaluation. This led the researcher to perform L.S.D. tests for the most accurate difference significance.

Table (13):
The Most Accurate Difference Significance Among the three measurements (pre-/intermediate/post-) for participants on the technical evaluation under investigation (n=20)

Technical tests		Measurements	Means	Means differences			L.S.D
				Pre-	Intermediate	Post-	
1	Ball handling	Pre-	2.03		*2.09↑	*3.97↑	0.52
		Intermediate	4.12			*1.88↑	
		Post-	6.00				
2	Passing	Pre-	1.10		*1.72↑	*2.83↑	0.35
		Intermediate	2.82			*1.11↑	
		Post-	3.93				
3	Shooting	Pre-	1.73		*3.53↑	*6.54↑	0.62
		Intermediate	5.26			*3.01↑	
		Post-	8.27				

Table (13) indicates that the most accurate difference significance among the three measurements was in favor of the post-measurement.

Table (14):
Improvement Percentages Among the three measurements (pre-/intermediate/post-) for participants on the technical evaluation under investigation (n=20)

Technical tests		Measurements	Means	Improvement percentages %		
				Pre-	Intermediate	Post-
1	Ball handling	Pre-	2.03		102.96	195.57
		Intermediate	4.12			45.63
		Post-	6.00			
2	Passing	Pre-	1.10		156.36	257.27
		Intermediate	1.82			39.36
		Post-	3.93			
3	Shooting	Pre-	1.73		204.05	378.03
		Intermediate	5.26			57.22
		Post-	8.27			

Table (14) shows improvement percentages among the three measurements on technical evaluation under investigation.

Discussion:

Table (9) indicates statistically significant differences among pre-, intermediate and post-measurements on technical tests. This led the researcher to perform L.S.D. tests for the most accurate difference significance. Table (10) indicates that the most accurate difference significance among the three measurements was in favor of the post-measurement.

The researcher thinks that this is due to the use of animation as it increases the involvement of vision that affects the technical performance level. This is in agreement with Ali Abd El-Megeed (1996) who indicated that animation increases motivation and learning attitudes effectively and decreases learning time. Animation makes the eye receive several fixed images simultaneously if presented quickly and sequentially in sufficient light. This animated visual presentation looks like video presentation expect that the artist creates graphs using computers and hand-made drawings for thing to look real and moving (1: 28-38).

The researcher thinks that this improvement in the post-measurement of technical skills (chest pass, rebound pass, ball handling and free throw respectively) where free throw came first with 0.50 as shown in table (10) is due to the fact that the shape of the character is real and the

character is performing in a real basketball court. When the animation character and place are so close to real persons and places these skills are performed accurately as all its aspects are very clear to learners and every single step is taught well.

The researcher thinks that this major improvement of the free throw is due to the fact that this skill needs high degree of concentration as this skill is identified to be performed from stationary position. Kamal Morsy (1996) and Ali Abd Al-Megeed (1996) indicated that free throw needs great deal of balance, concentration and repetition to increase its effective execution. This is provided by the animation program as mentally retarded learners need suitable content excitement and easy-to-understand information. They acquire information gradually due to differences in mental processes as thinking, concentration and attention (23: 323) (1: 28-38).

This is in agreement with Mona Mohamed (2000) (21), Ayman Mahmoud and Essam El-Din Mohamed (2001) (5) and Ali Abd Al-Megeed (1996) (1) who indicated the importance and effectiveness of educational aids, animation and pictures due to their positive effects on learning various motor skills for normal and handicapped individuals.

This proves the correctness of the first hypothesis stating that: "There are statistically significant differences among the pre-, intermediate and post-measurements of attack skills performance for mentally retarded persons who use the animation program in favor of the post-measurements"

Table (11) shows improvement percentages among the three measurements on technical tests under investigation (ball handling – passing – shooting). Improvement percentages for these skills were 150.14, 197.31 and 267 respectively.

This is in agreement with Hannafin & Savenye (1993), Taylor (1996), Bob (1997) and Mohamady (2002) who indicated that animations help improving the learning process of motor skills due to its abilities in clarifying relations among things, explaining difficult concepts in a very attractive way and storing information for prolonged periods of time. This is exactly what this category needs to acquire motor skills (17: 166) (26: 79) (27: 170) (3: 77).

This proves the correctness of the second hypothesis stating that: "There are statistically significant differences among the pre-, intermediate and post-measurements on the improvement percentage of attack skills performance for mentally retarded persons who use the animation program in favor of the post-measurements".

Table (12) indicates statistically significant differences among pre-, intermediate and post-measurements on technical evaluation. This led the researcher to perform LSD tests for the most accurate difference significance. Table (13) indicates that the most accurate difference significance among the three measurements was in favor of the post-measurement.

The researcher thinks that this difference among measurements is due to the effective role of the animation program in providing handicapped learners with these skills as it dealt with all realistic details of skills considering learners' abilities.

This is in agreement with Gaber Abd Al-Hameed (1996), Wafika Salem (2001) and Ayman Mahmoud (2003) who indicated the positive and effective role of animation in teaching motor skills. Animation contributes in analyzing and simplifying skills as it can present them slowly or quickly to be understood well according to learning abilities and path of learners in addition to their mental age. It fulfills what it is used for. In addition, it can be repeated if necessary and it provides learners with joyful, flexible and easy learning experiences (4: 170) (25: 208) (6: 39).

This proves the correctness of the third hypothesis stating that: "There are statistically significant differences among the pre-, intermediate and post-measurements on evaluation of attack skills performance for mentally retarded persons who use the animation program in favor of the post-measurements"

Table (14) shows improvement percentages among the three measurements on technical evaluation under investigation. The researcher thinks that is due to the use of the animation program as it considered individual differences among learners. This is completely different from the traditional way of explanation and model as it does not fulfill its objectives in dealing with this category of individuals.

This is in agreement with Al-Roaidy & Mardini (1994) (10), Bernshausen (1998) (14), Mona Mohamed (2000) (21), Ayman Mahmoud & Essam El-Din Mohamed (2001) (6), Abd El-Hakeem Abd El-Hakeem (2010) (2) and Alla El-Din Abd El-Hameed (2002) (3) who indicated the importance of animation programs in teaching sports skills due to its positive effects on acquiring sports skills and improving its performance level.

Conclusions:

In the light of this research aim, methods and results, the researcher concluded the following:

1- The recommended animation program helped mentally retarded person to acquire basketball attack skills.
2- Learners' involvement in the educational units led to increasing the improvement rate of technical performance for basketball attack skills under investigation.
3- The recommended animation program was very attractive for learners and increased their excitement to see the basketball attack skills under investigation in a different way.

Recommendations:

In the light of these conclusions, the researcher recommends the following:

1- Generalizing the recommended animation program when teaching mentally retarded persons other basketball skills
2- Paying more attention to preparing and designing animation programs for other sports activities for mentally retarded persons and adding them to educational curricula
3- Holding training courses for those who train mentally retarded person to identify the importance of animation programs for this category.

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