A Study on The Effectiveness of Training Programme Using Animation Pictures to Reduce Children's Physical and Emotional Behavioral Disorders who suffer from Intellectual Disability (Down's Syndrome)

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Abstract:

This study aims at designing a training programme by using animation pictures to identify: the effect of training programme using animation pictures to reduce children's physical and emotional behavioral disorders who suffer from intellectual disability (Down's Syndrome). In the present study, the researcher has hypothesized that there were statistically significant differences between the pre and post-tests of the emotional behavioral disorders for the pre-test of children with disabilities (Down's Syndrome).

The results of this study show that the hypothesis of this study has validated. So, according to the results of this study, which the suggested training programme with animation images has a positive effect on reducing children's emotional behavioral disorders who suffer from intellectual disability (Down's Syndrome), and there are improvement rates between the pre- and post-tests in emotional behavioral disorders of the study sample.

Keywords: Down's Syndrome, Animation Pictures, Intellectual Disability, Physical and Emotional Behavioral Disorders.

1. Introduction:

The significance of the study is a part of the introduction. So, a disability is a main problem that the civilized and underdeveloped societies may face. The high prevalence of disability is considered as a main problem in modern societies. The disabled people "people with disabilities" are represented an energy impairment and disability inclusion. So, the country must exploit, guide and provide disabled people with the necessary services in order to be a productive capacity in the society. Then, the necessary care to disabled people may be assist in the advancement of society as well as building an edifice of the society. The term disability refers to physical or mental attributes that some institutions, particularly medicine, view as needing to be fixed, it may also refer to any condition that makes it more difficult for a person to do certain activities or interact with the world around them. The disability is divided into many types such as:

1. Physical disability (is a limitation on a person's physical functioning, stamina, dexterity or mobility).
2. A sensory disability (can involve any of the five senses).
3. Intellectual disability "ID" (may mean difficulty retaining information, learning and communicating).

Down syndrome (trisomy 21) is considered as one of the intellectual disabilities (IDs) that constitute 10 % of the severe intellectual disability and moderate intellectual disability cases. Accordingly, Down syndrome is a genetic disorder caused by the presence of all or part of a third copy of chromosome 21. It is also caused by an imbalance that affecting the genetic material, in this case the child has an extra

chromosome in every cell. Childhood is one of the most important stages in human life, in which the innovation capabilities and the skills are improved among children, so it is very important to take care of children as well as providing them with the possibilities and games that help them in order to improve their abilities and skills. Children who suffer from the emotional behavioral disorders are characterized by at least one of these characteristics: they are not able to learn, they are not able to build relationships with mate and teachers, they may have unsuitable emotional behavioral disorders under normal conditions, they may feel upset and unhappy, they may have a tendency toward physical sufferings, illnesses, pains or worries concerning the personal problems. It surely cannot be asserted that mentally retarded child suffers from behavioral problems while the normal child does not. But it can be asserted that the behavioral problems that the mentally retarded child and the normal child suffer from are alike, which are considered as undesirable behaviors that have learned from different circumstances in live, i.e. behavioral problems in mentally retarded child are behaviors that have improved as a reaction of specific attractive, which have been enhanced by its effect on people and things in the environment surrounding. One of the most important characteristics of children with intellectual disabilities is that improving the performance motor of children with intellectual disabilities, which depends on Aerobics "physical exercises" that has prepared according to their conditions. The intellectual disablers tend to use individual games more than team games. The image is considered as an essential part of Hypermedia such as (Still Image and Moving Image), these images may be sequentially to prepare an integrated movement, which is widely used in sport pedagogy. Using the moving images has a significant role in children's life because of these moving games have wide uses, methods and many techniques. So, one

of the reasons that leads to use these games is that the moving games can display things that other means of mass communication cannot. Since, the animation starts at the time that the live-action films end. Moving images also have multidisciplinary such as television advertisement ***"TV ad",*** movies about public relation s, educational films (EF), entertaining children's television, short theatre and animated feature-length films. However, the animated films have an artistic beauty, which is considered as a fictional universe "fictional world" that pays attention. Animation is a method in which figures are manipulated to appear as moving images. Images in animation are drawn or painted by hand on transparent celluloid sheets to be photographed and exhibited on film. Hence, cartoon animation has a significant effect on children, due to the positive and negative effects of animation cartoons on children behaviour, these cartoons may help children in different aspects i.e. the animation cartoons can improve the child's imagination, improving his/her capacities, meeting the psychological needs of child, satisfying many desires the child wishes, which make child happy and cheerful. Children's interest of cartoons animation is one of the things that will facilitate to observe. So, they working on following the moving, speaking characters of cartoons that taken from human, animal or inanimate world, which approved in their artistic treatments on the rhythm and rapid movement. Additionally, the colour and sound that used to clarify some issues for child, which may be good or bad for children in their environment.

By reviewing the previous studies, it is concluded that there are many studies and researches that interested in functional and vital aspects while these studies have neglected the professionalism and psychological aspects in general.

Therefore, thought about improving modern techniques in order to use these techniques in the training process, such as animation cartoons that used as a technique that actively participates in attracting attention to explain the training topic perfectly as well as to reduce the emotional behavioral disorders.

2. The Aim of this Study:

This study aims at designing a training programme by using animation pictures to identify: the effect of training programme using animation pictures to reduce children's physical and emotional behavioral disorders who suffer from intellectual disability (Down's Syndrome).

3. The Hypothesis:

It is hypothesized that there were statistically significant differences between the pre and post-tests of the emotional behavioral disorders for the pre-test of children with disabilities (Down's Syndrome).

4. Methodology:

The researcher in this study has used the empirical research with single-group design by using the pre- and post-tests because of its appropriate for this study.

5. The Limitations:

a. Human Limit:

- Identifying the Sample of the Study

The sample of this study has purposively collected (Down's Syndrome) from al-Tarbiyah al-Fikriah School in Alexandria in 2019.

Table (1)

Descripting the Study Sample

	Total No.	The Number of male-students	The number of female-students	Age
Population Research	**13**	**6**	**7**	**Arranged between 8-10 years**
The Sample No. in the main study	**10**	**4**	**6**	**Arranged between 8-10 years**
Pilot study	**3**	**2**	**1**	**Arranged between 8-10 years**

The following procedures have been taken into account:

1. The sample must have a degree of intellectual disability (Down's syndrome).
2. They have never practiced the basic skills of track and field.
3. Their ages ranged from 8 to 12 years.
4. They must have a degree of mild cognitive impairment "MCI" (Intelligence quotient is ranged between: 50 – 70).
5. Their mental age is ranged from 3 to 6 years.
6. They do not suffer from any organic diseases.
7. They must have no abnormal posturing (Appendix 3).
8. They must be gone through early childhood intervention (ECI).
9. Children (the sample of the study) should not have previously been exposed to any programmes to reduce emotional behavioral disorders.

b. Place Limit:

Al-Tarbiyah al-Fikriah School in Alexandria– Egypt.

c. Time Limit:

Three pilot studies have been conducted for the period of 13/1/2018 – 27/2/2018, the pre-tests have been conducted for the period of 25/3/2018 –

28/3/2018, the main experience has been conducted for the period of 2/4/2018 to 4/7/2018 and the post-tests have been conducted for the period of 6/7/2018 to 8/7/2018.

6. The Tools Used

a. Stopwatch.

b. Measuring tape.

c. Tennis ball.

d. A plastic ball, size of a Handball.

e. Plastic collars.

f. Plastic bottles (bowling bottles).

g. Laptop "Notebook Computer".

h. Autodesk 3D Max.

i. A camera (video – photos).

7. The Pilot Studies

The first Pilot Study

- Management communication has conducted between the researcher and al-Tarbiyah al-Fikriah School in order to identify the following:

a. The availability of the sample, its features and number.

b. The availability of school such as stadiums, tools as well as their suitability.

So, the first pilot study has concluded that:

a. Providing a suitable sample in accordance with the conditions of the study.

b. The place suitability in order to make the present study.

The Second Pilot Study

While, the second pilot study has concluded that:

a. The suitability of the tests, which have easily applied.

b. The validity of the tools used.

c. Modifying some exercises that male and female students were not able to complete.

d. The Sport pedagogy teacher has been externalized in order to complete the measurements used.

The Third Pilot Study :

This picture was taken when the third pilot study has done (Presenting the Animation Pictures)

Presenting the animation pictures to the male and female students in order to identify the following:

- The response of the male and female students to represent the moving images and their interaction with these images.

- Determine the appropriate time to represent the moving images in one training unit.

The third pilot study has concluded that:

a. The response of the male and female students especially after the theoretical explanation of the represented trainings.

b. Regulating the time for presenting the moving images in one training unit.

8. The Training Programme:

a. The programme aim:

This programme aims to improve the main skills of track and field (Running, jumping, and throwing) and to reduce children's emotional behavioral disorders who suffer from intellectual disability (Down's Syndrome).

b. The Timeframe Programme:

Table (2)

Time Distribution of the Programme

No.	The Variables of the Programme	Time
1.	Number of weeks	12 weeks
2.	The number of training units per week	Three training units
3.	The time of the training unit	50 to 60 minutes
4.	Total number of training units	36 training units
5.	Total time units	1800 to 2160 minutes

Table (2)

The time of the training unit: 60 minutes divided as follows

Time	The Content of Unit
10 minutes	Representing the animation images
10 minutes	Warming up
10 minutes	Skillful Performance
10 minutes	Pacification

Table (3)

Preparing the Training Load at the Time of Carrying out the Programme

No.	Week	Size		Break (minutes)
		Freq.	Groups	
1.	1st & 2nd weeks	8 – 12	2 – 3	2 – 3
2.	3rd & 4th weeks	2 – 10	1 – 2	2 – 3
3.	5th & 6th weeks	1 – 2	1 – 4	1 – 5
4.	7th & 8th weeks	1 - 2	4 – 10	2 – 3
5.	9th & 10th weeks	1 - 2	4 – 6	1 – 5
6.	11th & 12th weeks	1 - 3	3 - 5	1 – 5

The Procedures that Used to Design the Training Programme by Using Animation Pictures

There are many procedures should be followed by the researcher in order to prepare a training programme by using animation pictures, with the assistance of a working group who have specific characteristics such as practical and technical skills in order to prepare animation pictures of main skills that concerning track and field.

The Principles in which the programme of moving images are built on:

a. Observance of the dynamic sequence of skills and performance appraisal at the time of presenting.

b. Observance of the performance speed and timing of skills and tests at the time of presenting moving images.

c. Limit the time to watch the moving images in the training unit, the length of the training programme period.

d. Displaying the moving images on the computer (128 : 57) (137 : 147) (125: 155).

Design Steps

The Preparatory Phase

a. Taking photographs at the time of implementing the exercises and skills of the training programme.

b. The images have shown by the supervisor.

c. Connecting with specialists who interest in moving images especially those who interest in 3D MAX.

d. Designing moving images of training and skillful.

e. Displaying the moving images video to the supervisor.

The Implementation Phase

a. Preparing the scientific topic that was moving images of the basic exercises and skills of track and field and the skills tests, which stored on the computer (laptop).

b. The moving images displayed as a slide show on the computer.

c. Shifting from one slide to another after achieving the aim of this slide.

d. The programme contents have been show on the screen, in order to choose the topic that will explain in accordance the previous training programme.

d. The training numbers are displayed on the screen and by clicking on the number, the training animation video will be displayed.

e. The student makes the exercises related to the skill that he/she learned during the animation video.

f. The animation video is played back again if there is any problem in the player's performance (118: 103, 211).

The Implementation Procedures of the Study:

The Pre-tests:

Applying the observation form (Emotional Behavioral Disorders) of children's parents (the study sample).

Appendixes (2): Applying the Suggested Programme

The training programme has been applied for 12 weeks, which made up of three units that have conducted on Sunday, Tuesday and Thursday of each week. So, the specialists recommend that training must be practiced three days per week, especially juniors, because they need rest to avoid overloading. The proposed training programme was applied by using moving images for the experimental group.

Some Moving Images

An Example for a Weekly Unit of the Training Programme

Week No. : Third Date:..... to .....

Time: 60 minutes

Days: Sunday, Tuesday and Thursday

Location: Al-Tarbiyah al-Fikriah School in Alexandria– Egypt

The Objective: improving the general and special physical abilities of the jump skill.

Parts Unit	The Content of Training Unit	Time (minutes)	Units Number	The training Unit	Groups No.	Break (between groups)	Freq. no.	Break (between frequencies)
The Preparatory Period	Presenting the moving images	10 minutes	1 -3	Making jump skill	1	——	30-40	——
	Warming up	10 minutes	1 -3	- Fast running in the track - Muscle's stretching legs and arms	1 2	——	2 -3 10 - 12	——
The Main Period	skill performance (Jumping)	30 minutes	1 - 3	- Exercise no. (13) - Exercise No. (14) - Exercise No. (15)	2 1 1	2 – 3 minutes	8 – 10 6 – 8 4 -6	——
The final period	Pacification	10 minutes	1 - 3	- walking in the track - Muscle's stretching	1	——	2 - 3	——

The hypothesis of this study is that "there were statistically significant differences between the pre and post-tests of the emotional behavioral disorders for the pre-test of children with disabilities (Down's Syndrome)". After completing the rationing procedures of the behavioral observation list and to confirm the scientific transactions in addition to the procedures that have been used on the rationing sample, the following has been used:

Table (4)

The statistical significance of emotional behavioral disorders questionnaire

The statistical significance / Axes	Unit of measuremen	*n* = 10				CV %
		Mean X	±*SD.*	Coefficient of Skewness	Kurtosis	
Anger disorders (self-control)		12.10	1.84	0.92	1.95	15.20%
Anxiety disorders		7.70	1.11	0.58	-0.84	14.43%
Attention disorder		8.40	1.34	0.91	-0.04	15.95%
Borderline personality disorder		7.80	0.25	-0.86	0.17	3.22%
Connection disorders		7.20	0.25	0.42	-0.81	3.49%
Major depressive disorder (MDD)		6.90	1.13	0.33	-2.06	16.40%
Self-esteem		6.70	1.16	0.24	-1.42	17.36%
mental disorders		6.50	0.84	0.01	-1.17	12.94%
Somatization disorder		4.60	0.84	1.00	-0.67	18.33%
Withdrawal and loneliness		6.10	1.05	0.74	1.06	17.26%
Another behavioural disorders		4.90	0.19	1.08	0.91	3.97%

Table (4) shows that the coefficient of skewness values are limited between (0.86--) to (1.08), which illustrates that these values are limited between (± 3), which confirms that the sample is free from defects in non-equilibrium distributions. It is also clear that all coefficient of variation (CV) values used in the behavioural disorders questionnaire of the totally sample are limited between (3.22%) and (18.33%), which is

a value less than 20% of the average that refers to the homogeneity of study sample in all the variables.

Table (5)

The statistical significance of behavioural disorders questionnaire (anger disorders "self-control", anxiety disorders, attention disorder and borderline personality disorder) under the study among the experimental group in both the pre- and post-tests n=10.

The statistical significance Axes	Unit of measurement	Pre-tests		Post-tests		Mean		T-value	The rate of improvement
		Mean X -	± SD.	*Mean X* -	± SD.	*Mean X F* -	*+ SD. F*		
Anger disorders (self-control)		**12.10**	**5.84**	**9.80**	**3.88**	**2.30**	**2.11**	**3.45***	**19.01%**
Anxiety disorders		**7.70**	**2.11**	**5.80**	**1.32**	**1.90**	**1.52**	**3.94***	**24.68%**
Attention disorder		**8.40**	**3.34**	**6.70**	**2.63**	**1.70**	**1.42**	**3.79***	**20.24%**
Borderline personality disorder		**7.80**	**2.25**	**5.90**	**1.37**	**1.90**	**1.20**	**5.02***	**24.36%**

* T- tabulated value at 0.05 = 2.262.

Table (5) and figure (1) that concerning the statistical significance of anger disorders "self-control", anxiety disorders, attention disorder and borderline personality disorder of behavioural disorders questionnaire between the pre- and post-tests for the experimental group, which shows that there are statistically significant differences, whereas these axes have improved after the experience with statistically significant differences at 0.05, in which t-value has arranged between (3.45 – 5.02), with an improvement rate that has arranged between (19.01% - 24.68%)

Figure (1)

Mean x of behavioural disorders questionnaire (anger disorders "self-control", anxiety disorders, attention disorder and borderline personality disorder) under the study among the experimental group in both the pre- and post-tests

Table (6)

The statistical significance of behavioural disorders questionnaire (connection disorders, major depressive disorder "MDD", self-esteem and mental disorders) under the study among the experimental group in both the pre- and post-tests n = 10

The statistical significance Axes	Unit of measurement	Pre-tests		Post-tests		Mean		T-value	The rate of improvement
		Mean X -	± SD.	*Mean X -*	± SD.	*Mean X F -*	*+ SD. F*		
Connection disorders		**7.20**	**2.25**	**5.90**	**1.73**	**1.30**	**0.82**	***4.99**	**%18.06**
Major depressive disorder "MDD"		**6.90**	**2.13**	**5.60**	**1.58**	**1.30**	**0.67**	***6.09**	**%18.84**
self-esteem		**6.70**	**2.16**	**4.90**	**1.66**	**1.80**	**0.63**	***9.00**	**%26.87**
mental disorders		**6.50**	**1.84**	**4.80**	**1.14**	**1.70**	**0.82**	***6.53**	**%26.15**

* T- tabulated value at 0.05 = 2.262.

Table (6) and figure (2) that concerning the statistical significance of connection disorders, major depressive disorder "MDD", self-esteem and mental disorders of behavioural disorders questionnaire between the pre- and post-tests for the experimental group, which shows that there are statistically significant differences, whereas these axes have improved after the experience with statistically significant differences at 0.05, in which t-value has arranged between (4.99 – 9.00), with an improvement rate that has arranged between (18.06% - 26.87%).

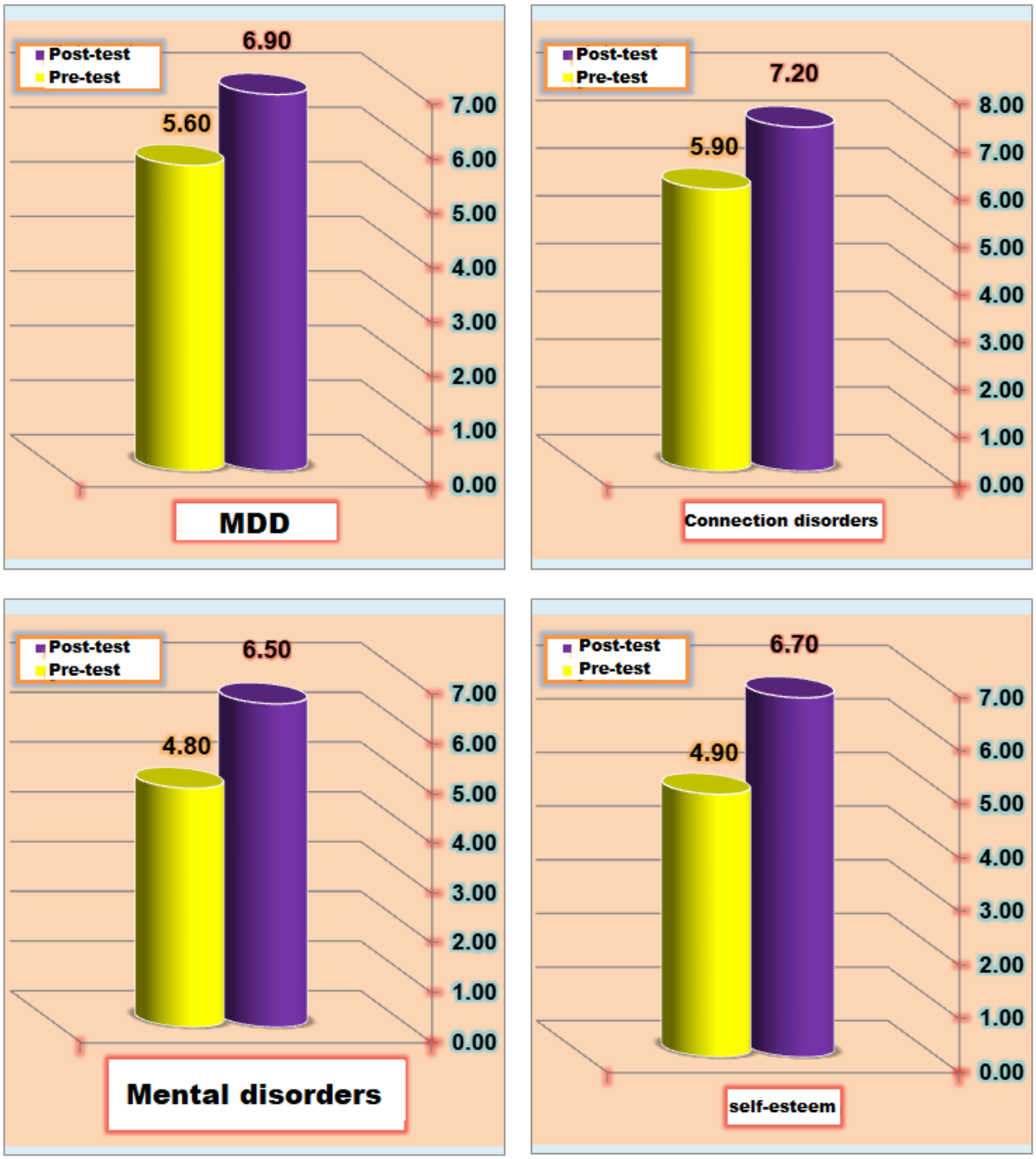

Figure (2)

Mean x of behavioural disorders questionnaire (connection disorders, major depressive disorder "MDD", self-esteem and mental disorders) under the study among the experimental group in both the pre- and post-tests

Table (7)

The statistical significance of behavioural disorders questionnaire (somatization disorder, withdrawal and loneliness, another behavioural disorders and the total number of questionnaires) under the study among the experimental group in both the pre- and post-tests n = 10

The statistical significance / Axes	Unit of measurement	Pre-tests		Post-tests		Mean		T-value	The rate of improvement
		Mean X -	± SD.	*Mean X* -	± SD.	*Mean X F* -	*+ SD. F*		
Somatization disorder		4.60	0.84	3.20	0.42	1.40	0.52	8.57*	30.43%
Withdrawal and loneliness		6.10	1.85	4.30	1.57	1.80	0.92	6.19*	29.51%
Another behavioural disorders		4.90	0.99	3.50	0.97	1.40	0.84	5.25*	28.57%
The total number of Questionnaires		78.90	13.78	60.40	9.00	18.50	5.32	11.00*	23.45%

* T- tabulated value at 0.05 = 2.262.

Table (7) and figure (3) that concerning the statistical significance of somatization disorder, withdrawal and loneliness, another behavioural disorders and the total number of questionnaires of behavioural disorders questionnaire between the pre- and post-tests for the experimental group, which shows that there are statistically significant differences, whereas these axes have improved after the experience with statistically significant differences at 0.05, in which t-value has arranged between (5.25 – 11.00), with an improvement rate that has arranged between (28.57% - 30.43%).

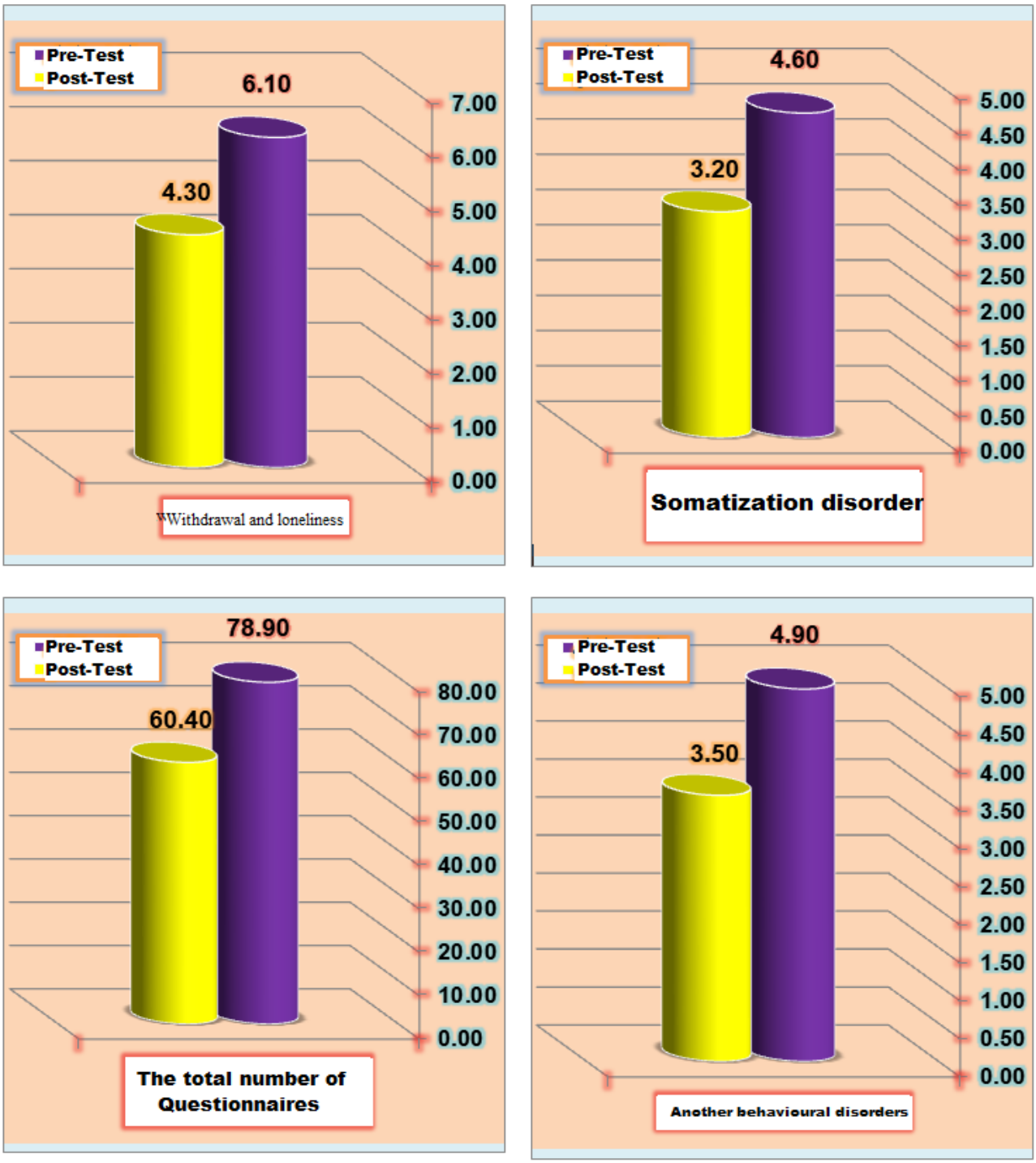

Figure (3)

Mean x of behavioural disorders questionnaire (somatization disorder, withdrawal and loneliness, another behavioural disorders and the total number of questionnaires) under the study among the experimental group in both the pre- and post-tests

9. Results and Discussion

By discussing the hypothesis of this study that was "there were statistically significant differences between the pre and post-tests of the emotional behavioral disorders for the pre-test of children with disabilities (Down's Syndrome)".

The tables (5, 6, 7) show that there are statistically significant differences between the pre and post-tests of the experimental group in the emotional behavioral disorders under studying and for the post-test. In table (5), there are statistically significant differences at (0.05), in which t-calculated value was arranged between (3.45 – 5.02), and the performance rate was 19.01% – 24.68%) as shown in figure (1).

Table (6) shows that there are statistically significant differences at (0.05), in which t-calculated value was arranged between (4.99 – 9.00) and the performance rate was (18.06% - 25.87%) as shown in figure (2).

Table (7) shows that there are statistically significant differences at (0.05), in which t-calculated value was arranged between (5.25 – 11.00), and the performance rate was (28.57% -30.43%) as shown in figure (3).

Animation movies have succeeded in attracting child by image, color and movement. As it has showed the possibility of improving the level of social skills of mentally retarded children (1).

Manal Ziada's study in 2013 indicates that there is a positive effect on developing some of desired behaviors of kindergarten children through animation (2).

Ahmed Al-Husseini's 2012 study agrees with Ziada`s study, as it has proven that there is a positive effect of animation in treating and changing children's behaviors in dealing with society. Also, animation movies have a vital role in the educational process (3).

Abdel Rahman Shawky's 2011 study indicates that there is a positive role for animation in providing people with special needs with some social skills (4).

The sports counseling programme is an opportunity given to the child to express himself/herself and get rid of pent-up emotions of tension, frustration, aggression, fear, and confusion (5).

Issa Jaber 1989 indicates that playing sport is effective in removing undesired patterns of behavior among children (6).

The practice of sport activities for people with special needs helps to develop psychological fitness in relation to stress, anxiety, depression, and mental disorders, and to develop a spirit of struggle and self-reliance in fulfilling the requirements of life, getting out of isolation, introversion, social relations, social interaction and the ability to communicate (7: 30-31).

Abdul-Muttalib Al-Quraiti 2005 agrees with Muhammad Abdul-Hamid 1999 that physical education and sports for the mentally handicapped contribute to raising their level of focus and attention and help to get rid of isolation, withdrawal and aggressive energy, and help to integrate with others, develop self-confidence and enhance self-concept (8: 252) (9: 68).

Hilmi Muhammad and Lyla Farhat (1998) have agreed with Huda Hasan and Mahir Hasn (2008) that the sports activities assist in increasing the focuses, social adjustment, self-consciousness, the acquisition of cooperative tendencies, depending on him/her-self in order to achieve their needs and adjusting the negative behaviours (10: 50) (11: 134).

The results of the training programme by using the animation images are consistent with Ibrahim Rashad's study (2001), which stated that there is a negative

effect of the sport programme on reducing the children's emotional behavioral disorders who suffer from intellectual disability (12).

The results of the training programme by using the animation images are also consistent with Abd al-Rahman Qassim's study (2013), which stated that there is a positive effect of moving programmed on some of children's emotional behavioral disorders who suffer from intellectual disability (13).

Finally, Siham Qdis has identified that there is an effect of animation cartoons programme on some floor movements skills (gymnastics), which have been suggested for intellectual disablers that lead to improve the spoiled child that concerning the behavioral disorders (14).

In accordance with these results, the hypothesis of this study has validated.

10. Conclusions

In accordance with the study aims, hypothesis, limitations, tests, the methodology and the statistical analysis, it can be concluded that:

a. The suggested training programme with animation images has a positive effect on reducing children's emotional behavioral disorders who suffer from intellectual disability (Down's Syndrome).

b. There are improvement rates between the pre- and post-tests in emotional behavioral disorders of the study sample.

11. Recommendations

The researcher has recommended that:

a. Giving more attention to the use moving images in training people with special needs of sports activities in general and track and field in particular.

b. They have to be guided by the suggested training programme by using moving images on reducing children's emotional behavioral disorders who suffer from intellectual disability (Down's Syndrome).

c. Giving more attention of using training of the sports activities in general and track and field in particular in order to reduce children's emotional behavioral disorders who suffer from intellectual disability (Down's Syndrome).

d. The necessity of using moving and animation images in training the sports activities.

e. Conducting similar studies by using the animation images in order to confirm the effectiveness of using the moving images on different samples.

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