

Educational software using multimedia and its impact on some basic skills In basketball for persons with special needs

***Dr/ Alshimaa Abdel fatah Alkhfif**

Introduction and research problem:

caring for people with special needs has become one of the most important issues that occupy the thinking of many scientists, especially educational psychologists because it is one of the basic criteria that measure the progress of any nation in this age, The age of cognitive explosion. (10 : 11)

The use of computers in the field of intellectual disabilities in particular contributes effectively to the education of students specially (who are able to learn) when it provides learning in small steps in a good sequence, and allows them to practice learning through the careful design of computer programs in line with their capabilities, The computer is among many educational technologies that allow fruitful interaction with the learner, including the color,

sound and movement that attracts the attention of students with mental disabilities, raises their concerns and satisfies their wishes and needs during learning, so the use of computer as an educational medium for the mentally handicapped increases the effectiveness of their learning, and contributes to the effectiveness of the educational process of ordinary people as well. (3: 607) (8: 4-6)

The researcher chose to use one of the educational technology innovations in order to present the proposed program in solidarity with the efforts aimed at educating children with mental disabilities in interesting and enjoyable ways. They learn better and become more cooperative when they enjoy what they do and when used in

* Lecturer, of the theories and applications of sports collective and racket sports Department of physical Education College, Sadat City University, Egypt.

the exciting educational material stimulates their motivation to learn.

Hence, the current research idea is to identify the impact of computer technology software on the level of teaching some basic skills in basketball.

Therefore, it is clear that the research is an attempt to employ technology in the service of people with special needs, including the mentally handicapped. Thus, this study is one of the studies that is based on the use of a program for small games through the software technology multimedia, using the visual and acoustic effects of the mentally handicapped class by watching the visual computer program for the skills in question and listening to a detailed description of these skills (sound effects) through the Data Show, Practice through the application of skills in the field.

Research objectives:

1. Design a multimedia program to teach some basic skills in basketball for students with special needs (learning disabilities).
2. Identify the impact of the program on learning students

(ability to learn) skills of basketball in search.

research Hypotheses:

1- There are statistically significant differences between the intermediate (pre-post) parameters of the experimental group (using multimedia) in the learning level of some basic skills (in question) for the benefit of telemetry.

2- There are statistically significant differences between the mean (pre-post) of the control group (the traditional method) and the level of learning of some basic skills (in question) for the benefit of telemetry.

3- There are statistically significant differences between the mean of the two dimensions of the experimental and control groups in the level of learning some basic skills for the benefit of the experimental group.

Terms used:

:Persons with special needs-

" This term is based on the fact that in society individuals differ from the general members of society, and the term refers to the fact that such individuals have special needs that are unique to them, namely, programs, services, methods, devices, tools or

modifications required by them all or Some of them are living conditions, and their nature, size and duration determine the characteristics of each individual". (7: 6)

- Mentally handicapped (able to learn): -

"They are children who are between 50-70 on the Stanford-Bennett test and are called the class of learners who have the ability to benefit from special education programs that are commensurate with their levels and mental abilities." (3: 361)

Research procedures: First, the research methodology:

The **researcher** used the experimental method due to its suitability to the nature of this study, It used one of the experimental designs for two groups, one experimental and the other a control To compare the pre and the post between them.

Second, the research community and sample:

The sample of the study was chosen from mentally disabled pupils enrolled in the school of thought in Minuf for

the academic year 2015/2016. The sample consisted of (35) students from the total research community and distributed in two semesters, whose mental age ranged from 6-9 years, 12 years of age (born in 2004 to 2007) and their degrees of intelligence from 50 to 70 degrees on the Stanford-Binet Intelligence Scale were randomly divided and divided into two groups of 10 students for the experimental group and 10 students for the control group. (15) students from the research community and outside the basic sample to conduct the survey Scientific transactions (Believe - Stability).

The homogeneity of the sample:

The researcher found the homogeneity of the sample of the research as a whole (35) students to make sure that it occurs under the normal curve in the variables (age - height - weight - mental age), as shown in Table (1).

The researcher also finding homogeneity of the sample in the physical and skill variables of the sample individuals and so are shown in Table (2).

Table (1)

Statistical characterization of the sample individuals in the variables "Age – Height - Weight- mental age " n =35

Variables	measuring unit	mean	Median	mode	Std Deviation	skewness
Age	Year	10.54	10.00	10.50	1.03	1.44
Height	C.m	147.43	146.00	145.00	6.14	-0.23
weight	K.g	42.33	41.00	40.50	3.18	0.43
mental age	Year	7.59	7.00	7.80	1.04	1.70

Table (1) shows that coefficients of torsion of research sample are between (+3, -3) in the variables of

(Age - Height - Weight - mental age) which indicates the coherence of the sample.

Table (2)

Statistical characterization of sample in the physical and skill tests individuals n = 35

variables	Measure unit	mean	Median	Mode	Std Deviation	skewness
30m sprint	sec	8.12	8.49	9.00	1.88	1.05
Vertical jump of stability	c.m	19.00	18.50	17.20	1.91	0.58
Running switchback to Barrow	sec	16.42	16.00	17.00	1.84	0.72
Bend the trunk of sitting	c.m	11.50	11.70	12.00	1.15	1.18
Running in place for 2min	number	53.04	55.00	54.00	10.22	1.40
dribble of running and then stop and pivot	sec	18.00	18.06	18.52	1.87	0.84
Free throw	point	1.64	1.00	1.00	0.62	0.43
passing movement with receiving and stop	point	10.48	10.00	8.00	2.43	0.28
dribble then jump shot	point	5.22	5.00	6.00	1.04	0.31

Table (2) shows the homogeneity of the research sample in physical and skill tests, as the skewness of research sample are between (+3, -3) in the variables.

- Sample equivalence:-

To ensure that the levels between the two groups converge, the variables related to the two groups were

adjusted, as shown in the following table:

Table (3)
The significance of differences between the averages of per measurements in physical and skill tests of the experimental and control groups and skill tests individuals n = 35

variables	Measure unit	experimental groups		control groups		Means difference	'T' Test
		mean	Std Deviation	mean	Std Deviation		
30m sprint	sec	9.14	0.27	8.68	0.22	0.46	0.92
Vertical jump of stability	c.m	18.70	1.49	17.21	1.25	1.49	0.94
Running switchback to Barrow	sec	15.13	2.22	15.67	2.29	0.54	0.92
Bend the trunk of sitting	c.m	11.49	2.73	12.06	2.88	-0.57	0.91
Running in place for 2min	number	49.12	3.42	51.02	3.94	-1.90	0.96
dribble of running and then stop and pivot	sec	17.50	0.82	17.92	0.64	-0.42	0.93
Free throw	point	1.08	0.57	0.78	0.35	0.30	0.89
passing movement with receiving and stop	point	12.40	1.29	11.10	1.07	1.30	0.72
dribble then jump shot	point	4.90	1.82	5.01	1.98	-0.11	0.89

* The value of the table "T" at a significant level (0.05) = 2.07

Table (3) shows that the calculated value of t in all previous variables indicates that there are no statistically significant differences, which

means the equivalence between the two groups of research.

Third, tools and means of data collection:

The researcher based on the collection of information

and data related to this research to the means and tools considered by the researcher to meet the following conditions:

- Be easy to implement and have metering devices.
- Be effective in diagnosing specific aspects of research.
- To meet the scientific standards (Believe - stability).

2. Personal interviews:

The researcher designed questionnaires, experts in the field of basketball and saw the number (3) experts to determine: **Attachment (1)**

-physical and Skill tests that are commensurate with the research sample.

- The contents of the training program. **Attachment (3)**

3. tools and equipment used in the research:

The following tools and devices were used:-

- Electronic balance for weight measurement, Resistometer for measurement of length, Asics, sling, Medical balls less than 1km, Basketball court, Basketball legal basket, Wall and chalk, Stopwatch for measuring time, Measuring tape, Wall mount, Cones, Lap top, Data Show monitor.

4- IQ test :-

The intelligence score of the research sample was

determined by the results of the measurements recorded in the school records and attached to each student's intelligence score by using the **Stanford-Bennet Intelligence Test, the Arabization and Standardization of Louis Malika (1998) (6)**, which was applied by psychologists School through students responses.

5. Forms Search:

- Recording data on individuals search forms:

The researcher designing forms to record the measurements for research so that the simplicity and ease of registration accuracy for data collection and tabulation available as a prelude to statistically treated as follows:

-Registration of Students measurements in the form variables (Age-Height-Weight-MentalAge).

-Registration of students measurements in the physical and skill tests form.

Attachment (5)

6. School records:-

Where the use of school records to identify the (age-age - mental age - IQ) for each member of the research sample.Fourth: Scientific transactions used for the tests:

Fourth: Scientific transactions used for the tests:

1. Believe physical and skill tests: -

The validity of differentiation was used in the

"comparative comparison method" which is based on the comparison of the upper and lower springs of a single group using the t.test test, which is illustrated in the following table:

**Table (4)
Significance of differences between the upper and lower spring of physical and skill tests N= 15**

variables	Measurement unit	Top Spring N1 = 4		The lower spring N 2 = 4		Means difference	'T' Test
		mean	s.d	mean	s.d		
30m sprint	sec	9.51	1.06	11.51	1.34	-2.00	7.42
Vertical jump of stability	c.m	19.16	1.61	16.87	1.03	2.29	9.40
Running switchback to Barrow	sec	14.22	0.96	15.98	0.68	-1.76	7.33
Bend the trunk of sitting	c.m	13.41	1.04	10.69	0.97	2.72	6.41
Running in place for 2min	number	53.62	2.02	48.11	1.51	5.51	11.17
dribble of running and then stop and pivot	sec	16.20	0.86	18.17	0.58	-1.97	5.34
Free throw	point	1.38	0.29	0.68	0.17	0.70	4.15
passing movement with receiving and stop	point	13.11	1.16	11.58	1.02	1.53	6.20
dribble then jump shot	point	6.02	1.78	4.11	1.43	1.91	5.71

The value of "T" Driven at the level (0.05) = (2.45)

Table (4) shows that the calculated value of T in all the previous tests indicates that the value of T is statistically significant. This indicates that there are differences between the upper and lower spring in

favor of the higher spring. Thus, physical and The distinction between individuals, which confirms the validity of those tests in the measurement of what was put for it.

2. The stability of physical and skill tests:

To calculate the stability of physical and technical tests, the researcher used the method of applying the tests and their application, To implement this the tests were applied twice sequentially, The first application, which was done on

Tuesday 2/2/2016, is the grades extracted when calculating honesty, The tests on Tuesday 9/2/2016 m with a difference of time (7) days between the first application and the second application, and the following table shows the coefficient of stability tests:

Table (5)
Reliability coefficient of physical and skill tests N = 15

variables	Measurement unit	Implementation first		Implementation second		correlation
		mean	s.d	mean	s.d	
30m sprint	sec	8.73	0.98	8.44	0.94	0.71
Vertical jump of stability	c.m	17.62	2.91	18.01	2.80	0.78
Running switchback to Barrow	sec	16.07	2.23	15.68	2.13	0.91
Bend the trunk of sitting	c.m	11.61	1.55	12.23	1.80	0.87
Running in place for 2min	number	50.11	2.01	52.40	2.95	0.92
dribble of running and then stop and pivot	sec	17.90	1.19	17.30	1.09	0.89

Follow Table (5)
Reliability coefficient of physical and skill tests N = 15

variables	Measurement unit	Implementation first		Implementation second		correlation
		mean	s.d	mean	s.d	
Free	Point	0.98	0.53	1.02	0.72	0.75

throw						
passing movement with receiving and stop	point	13.14	1.75	13.85	1.91	0.76
dribble then jump shot	point	4.99	0.90	5.42	0.95	0.83

The value of "R" Driven at the level (0.05) = (0.57)

Table (5) shows that the calculated "t" value in all previous tests indicates that the value of t is a statistical function. This indicates a correlation between the first and second applications and thus the stability of the tests.

Fifth: Steps to design Training program: -
1.Steps Design for the educational Program:

The researcher chose to use multimedia in building the proposed program of some basic skills in basketball in support of the modern vision in education, which calls for the education of mentally handicapped children in ways as interesting and enjoyable as possible.

The program was designed using the language of "Visual Basic" as it is one of the easiest and most commonly used software languages and

common among the program design process, and the researcher has followed the scientific steps for the process of building educational software through the reference reference survey, The program is based on the following principles and steps:

-2-General aims of the program

The aim of the program is to design a multimedia learning program and to see how it influences the teaching of some of the selected skills under study for the mentally disabled

3- Foundations of the educational program:

The **researcher** took care when building and designing the tutorial before applying it to the following sample: that its content is consistent with the objective of the program. •

The program is suitable for the capabilities of that category. •

-The contents of the program should challenge their abilities so as to stimulate their motivation to learn.

Provide the right place and facilities to implement the program. •

Taking into account security and safety factors when applied. •

Ensure that the program achieves the thrill and excitement factor. •

The program is characterized by simplicity and diversity. •

Consider gradation from easy to hard. •

The contents of the program achieve the integrity of personality in terms of the individual's relationship with himself and with others.

- Phase II (Design):-

In designing the program, the **researcher** considered the following:

-Take full advantage of the program by organizing it well and in an interesting and consistent manner.

- Choose the display colors and shapes to be suitable for different skills.

- Repeat the skill more often so that members of the research sample can understand the skill and ability to implement it according to their performance requirements.

- Design the program to fit the part of the skill instruction.

- The skills should match the age of the sample members.

- Take into account the principle of gradual learning in the easy to difficult.

- The modernity of the content of the design program and this is what the researcher has designed through the design of the program.

4. - Organizing the content of the educational programs: -

The **researcher** coordinated with the technician to design the program to carry out the proposed exercises in the coordination of the content of the educational program before starting the application.

1. Educational content of the program:

The educational content of the selected skills "under Search" includes modules that include:

- Warm up.
- Physical preparation that matches the skill that is taught in the unit.

• Presentation of a skill performance model.

• Calming.

- Time distribution of the proposed multimedia program:-

The program consists of (30) units of study unit time (45Min) days (Sunday -

Tuesday - Thursday), The program includes (3) educational skills to master and improve Performance, and the table shows the time distribution of the proposed program.

Table (6)

Time distribution of the proposed program using multimedia

S	Content	Time distribution		
1	Number of weeks	10		
2	Number of units per week	3		
3	Number of educational units as all	30		
4	Application time per unit for the two groups	45 min		
		20min Explanation and model	20min application	5min Move to and from the stadium or prepare for execution
5	Total time of the program	1350		

Sixth: The choice of assistants:

The **researcher** chose two assistants from her colleagues in the school. They were introduced to the aspects of research and guidance in terms of measurement requirements and how to perform physical and technical tests, as well as providing them with the knowledge of any queries encountered during the application of the research.

Seventh: Steps search application:

1. per measurements:

The per measurements of the two research groups were carried out prior to the implementation of the basic experiment in the variables under consideration. Equivalence levels were used and these were considered the tribal measurements of the two research groups on Sunday 14/2/2016.

2. Implementation of the basic experience:

The **researcher** applied the program from Sunday

21/2/2016 to Thursday 28/4/2016 and the duration of the program was 10 weeks.

3. post measurements:

After the end of the period specified for the implementation of the basic experiment, the researcher carried out remote measurements of the research sample of the technical variables on Sunday 1/5/2016. The researcher took into account that the dimension measurements are carried out

under the same conditions as the tribal measurements.

Eighth: statistical treatments:

Statistical treatment consisted in:

- Descriptive statistics "measures of central tendency standard deviation sprains transactions"
- The correlation coefficient to calculate the stability of physical and skill tests.
- Test "T" (T. test).
- Ratio improvement by percentages.

Presentation and discussion of the results: -

Table (7)
Significance of differences between the mean of two measurements (pre – post) In skill tests For the experimental group N = 10

variables	Measure unit	pre measurement		Post measurement		Means difference	'T' Test	Improvement ascriptions
		mean	s.d	mean	s.d			
dribble of running and then stop and pivot	sec	17.49	1.42	11.46	0.84	6.03	4.31	34.48
Free throw	point	0.88	0.26	2.31	0.51	1.43	3.69	162.05
passing movement with receiving and stop	point	11.34	1.55	22.19	1.92	10.85	4.78	95.68
dribble then jump shot	point	5.17	1.07	12.33	1.69	7.16	5.34	138.49

The value of "T" Driven at the level $(0.05) = (1.80)$

Table (7) shows that the calculated value of T in all the variables under study indicates that the value of T is a

statistical function. This indicates that there are differences between the (pre-post) measurements of the

experimental group for the benefit of the telemetry

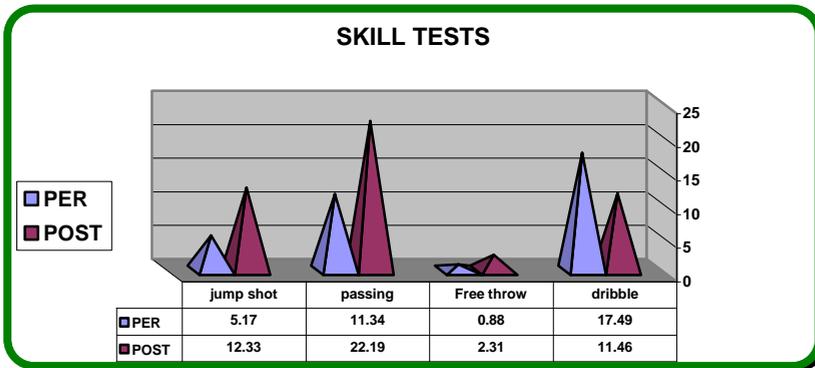


Figure (1)

Indication of differences between the mean (pre - tribal) measures of the experimental group

Table (8)

Significance of differences between the mean of two measurements (per – post) In skill tests For the control grou N= 10

variables	Measure unit	pre measurement		Post measurement		Means difference	'T' Test	Improvement ascriptions
		mean	s.d	mean	s.d			
dribble of running and then stop and pivot	sec	17.69	1.61	15.62	1.94	2.07	3.15	11.70
Free throw	point	0.98	0.33	1.28	0.39	0.30	1.45	30.61
passing movement with receiving and stop	point	12.05	1.31	15.86	1.59	3.81	2.34	31.62
dribble then jump shot	point	4.98	1.04	7.14	1.22	2.16	2.17	43.37

The value of "T" Driven at the level (0.05) = (1.80)

Table (8) shows that the calculated value of T in all the variables under study indicates that the value of T is a statistical function. This

indicates that there are differences between the (pre-post) measurements of the control group for the benefit of the telemetry.

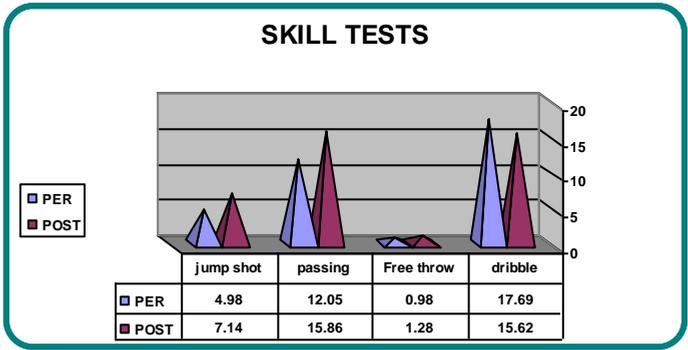


Figure (2)
Indication of differences between the mean (pre - tribal) measures of the control group

Table (9)
Mean the differences between the mean of the dimensional measurements in the skill tests of the two groups N = 10

variables	Measure unit	experimental group		control group		Means difference	'T' Test
		mean	s.d	mean	s.d		
dribble of running and then stop and pivot	sec	11.46	0.84	15.62	1.94	4.16	3.77
Free throw	point	2.31	0.51	1.28	0.39	1.03	1.98
passing movement with receiving and stop	point	22.19	1.92	15.86	1.59	6.33	7.13
dribble then jump shot	point	12.33	1.69	7.14	1.22	5.19	4.57

The value of "T" Driven at the level (0.05) = (1.72)

Table (9) shows that the difference in all variables, calculated value of t is a statistically significant indicating differences between the two groups and for the

benefit of the experimental group (multimedia).

Second, discuss the results: -

The **researcher** discusses the results obtained from the data of the two groups of research and statistical treatments using the frame of reference and previous studies as follows:

First: Explain the results of the differences between the average pre and post measurements of the experimental and control groups:

It is clear from Tables (7, 8) that there are statistically significant differences between the average of the pre measurements and the post measurements in the skill tests under discussion, This indicates that both the traditional programs and the proposed program have achieved progress. The researcher points out that the exercises are performed either in the traditional program or the proposed program The researcher attributes this improvement in the level of performance of some of the basketball skills "under discussion " in the members of the control group to the presence of the qualified

teacher who provides a clear idea of how to perform correctly that makes it more effective and provide the correct feedback to students that Another during the class and comment on the common mistakes and how to correct them and during which is based on the verbal explanation of the skill in addition to the model or practical presentation of it, with the performance of students and the exercise and the accompanying performance of the teacher through the performance of the performance of the skill, **Tariq Abdul Raouf 2014** (11) pointed out that the performance of the players depends on the ability of the teacher to explain the good verbal performance in terms of health conditions for all parts of the body during the performance of motor skill, and the exercise performed under the programs organized and supervised by a qualified teacher, **Magdy Fahim 2013** (7), **Adel Ramadan 1997** (1), where they agreed in their studies that the regularity of students in the educational program and training is regulated under the supervision

of a scientifically qualified will lead to a positive impact.

The **researcher** also attributes the progress of the experimental group to the interaction between the pupils and the computer in terms of the integration of the video and sound, which led to the availability of the element of excitement and motivation towards the computer skills technology program, thus providing students with immediate feedback, Help build and visualize the performance of each skill.

This proves that the suggested program for some skills using multimedia technology has a positive effect on the search variables, The **researcher** is due to the attractiveness and effectiveness of presenting the skills through the multimedia computer. It also implements these skills by stimulating students' interest and motivating them to exert effort and not be bored during Their implementation of each skill.

Hence, it is clear from the above results that the first and second hypotheses of the research hypotheses have been achieved, stating that there are statistically significant

differences between the pre and post in favor of the post measurement of the experimental and control groups.

Second: Interpretation of the results of the differences between the mean post measurements of the experimental and control groups:

It is clear from Table (9) that there are statistically significant differences in the experimental and control groups in the skill tests in favor of the experimental group. The researcher points out that the use of multimedia in education leads to a deeper deepening of the skill of the students, , And the program displays and clarify movements of the body parts during the performance of skills and focus on the important parts of performance within each skill, This shows that multimedia technology software improves the educational process of the mentally handicapped and thus achieves better performance, In addition, the good design of the technological programs provides students with constant feedback and thus the continued positive reinforcement of the mentally

handicapped, which has a positive and effective impact on the students' learning of the different skills, This result is consistent with the study of **Yaakub & Alzaza (2011)** (12), which resulted in the students' learning program having largely agreed on the usefulness of this type of learning, and that learning through multimedia has many educational benefits, which makes us interested in this type of learning. The need to conduct many research on this model and how to employ and benefit from it in the process of teaching and learning stages.

This result validates the third hypothesis, which states that there are statistically significant differences in post measure (between the experimental group and the control group).

First - conclusions: -

Through the nature of this study and the sample and the methodology used and the results of the statistical analysis in the scope of this research to the researcher reached the following conclusions:

- The proposed program by teaching by the teacher (explanation and presentation) without using the computer has

a positive impact on the skill level for the members of the control group.

- The proposed program via multimedia using the computer has a positive effect on the skill level of the experimental group members (multimedia group).

- The proposed program via multimedia using the computer was more influential at the skill level compared to the explanation and presentation method, which indicates the effectiveness and impact of the multimedia method (the proposed program using multimedia).

Recommendations: -

In light of the results of the research, the **researcher** recommends the following:

- To implement the proposed program in schools of intellectual education for its positive and effective influence in the development of the skill level among students with mental disabilities.

- Working on teaching the various special groups (deaf people - handicapped- deaf and dumb ...) through various educational programs using the computer.

- Training the teaching staff in the field of special education on the use of modern devices

suitable for the methods of education mentally disabled students because of its characteristics and important characteristics.

- The interest in the introduction of some technological means and the use of computer in the field of special groups to help in the process of learning to keep pace with advanced educational techniques.

- Conduct similar studies using multimedia in other special categories.

- Work to satisfy the needs of the child mobility through the proposed program and commensurate with the trends and trends of the child by sex, "boys and girls."

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