



## عنوان الرسالة

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## إشراف

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

تعالى:

قال

{وَقُلْ اعْمَلُوا فِسِيرَى اللَّهِ عَمَلَكُمْ وَرَسُولُهُ وَالْمُؤْمِنُونَ  
وَسُرُّدُونَ إِلَى عَالِمِ الْغَيْبِ وَالشَّهَادَةِ فَيُنَبِّئُكُمْ بِمَا كُنْتُمْ  
تَعْمَلُونَ}.

صدق الله العظيم

(سورة: التوبة، آية: ١٠٥)

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**:Key Words**

- .Program -
- .Early Intervention Program -
- .Computer -
- .Math Preschool Stage Concepts -
- .Mentally Retarded Children -
- .Adaptive Behavior -

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## الفصل الأول

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Basic

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**:Early Intervention Program**  
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**:Concepts**

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**:Math Preschool Stage Concepts**

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**Simple Mentally Retarded**

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**: Adaptive Behavior**

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$$\frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})^2$$

$$= \frac{1}{n} \sum_{i=1}^n x_i^2 - \bar{x}^2$$

Wilcoxon Test -

Mann-Whitney Test -

## الفصل الثاني

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أولاً: الأطفال ذوو الإعاقة العقلية:

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British Mental Deficiency act

Mangal, S. 2002 : ) .

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Reddy, et al. ) .

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ثانياً: برامج التدخل المبكر للأطفال ذوي الإعاقة العقلية:  
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American Educators

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255 : 1981 Corinne, Ed. Garland,; et al) .

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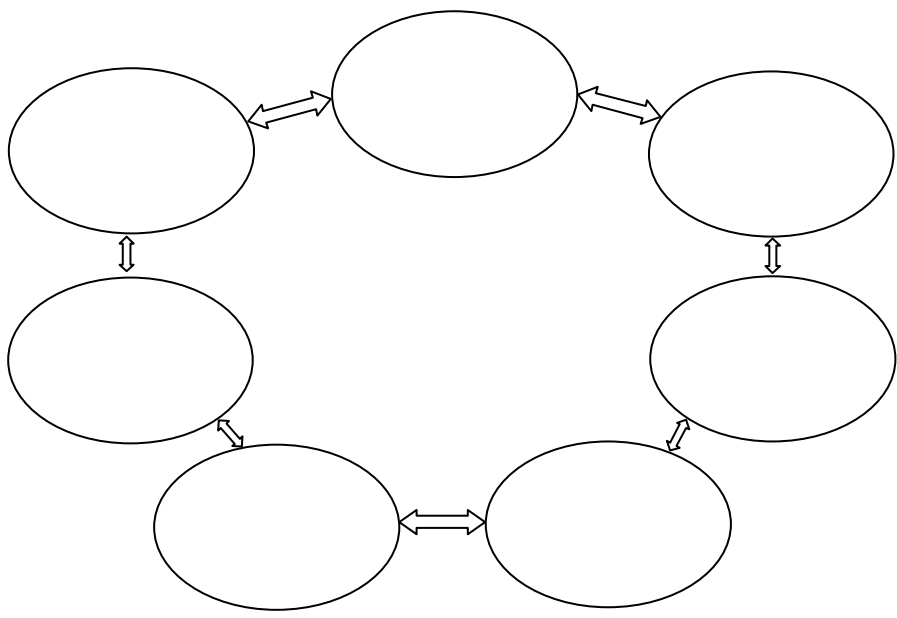
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ثالثاً: المفاهيم ما قبل الأكاديمية في الرياضيات **Math Preschool Stage**  
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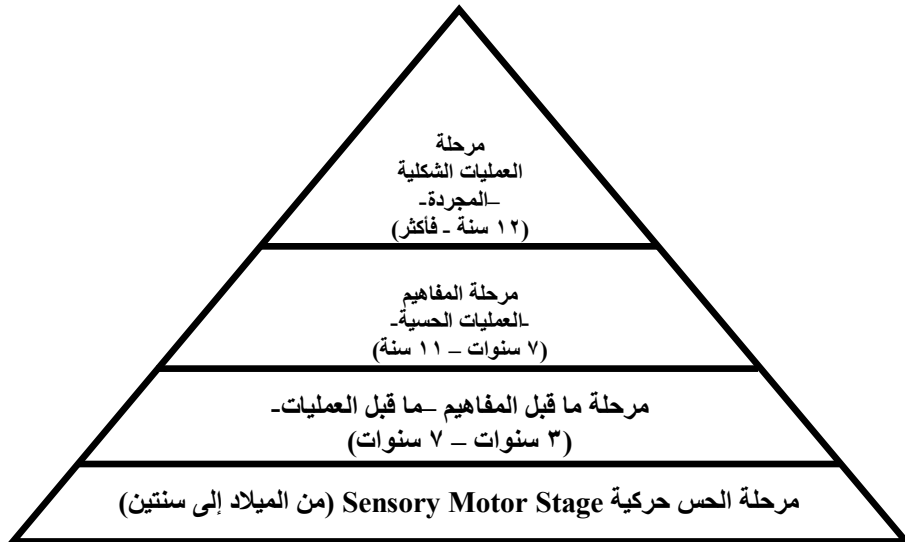
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رابعاً: الحاسوب التعليمي (الكمبيوتر التربوي) **educational computer**:

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**خامساً: تحسين السلوك التكيفي لدى الأطفال ذوي الإعاقة العقلية**  
**Modifying Adaptive Behaviour among Mentally Retarded Children**

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**Behavior**

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**Adaptive Behavior**

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.(McComb 2007 : 281 ) .

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(McComb 2007 : 282)

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Leland et al

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**:Independent Functioning**

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**:Personal Responsibility** .

**:Social Responsibility** .

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Touch Math

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Mann-Whitney Test

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	<b>Z</b>					
	'	١٠٤,٠٠	١٠,٤٠	١٠	الضابطة	
		١٠٦,٠٠	١٠,٦٠	١٠	التجريبية	
	'	٨٥,٥٠	٨,٥٥	١٠	الضابطة	
		١٢٤,٥٠	١٢,٤٥	١٠	التجريبية	
	'	٨٧,٠٠	٨,٧٠	١٠	الضابطة	
		١٢٣,٠٠	١٢,٣٠	١٠	التجريبية	
	'	١١١,٠٠	١١,١٠	١٠	الضابطة	
		٩٩,٠٠	٩,٩٠	١٠	التجريبية	
غير دالة	١,٤٨	٨٥,٥٠	٨,٥٥	١٠	الضابطة	
		١٢٤,٥٠	١٢,٤٥	١٠	التجريبية	
غير دالة	١,٦	٨٤,٠٠	٨,٤٠	١٠	الضابطة	الدرجة الكلية
		١٢٦,٠٠	١٢,٦٠	١٠	التجريبية	

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Mann-Whitney Test

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	<b>Z</b>					
		٨٣,٥٠	٨,٣٥	١٠	الضابطة	
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		١١٤,٠٠	١١,٤٠	١٠	الضابطة	
		٩٦,٠٠	٩,٦٠	١٠	التجريبية	
		١١٩,٠٠	١١,٩٠	١٠	الضابطة	
		٩١,٠٠	٩,١٠	١٠	التجريبية	
غير دالة	٠,٢٣	١٠٨,٠٠	١٠,٨٠	١٠	الضابطة	الدرجة الكلية
		١٠٢,٠٠	١٠,٢٠	١٠	التجريبية	

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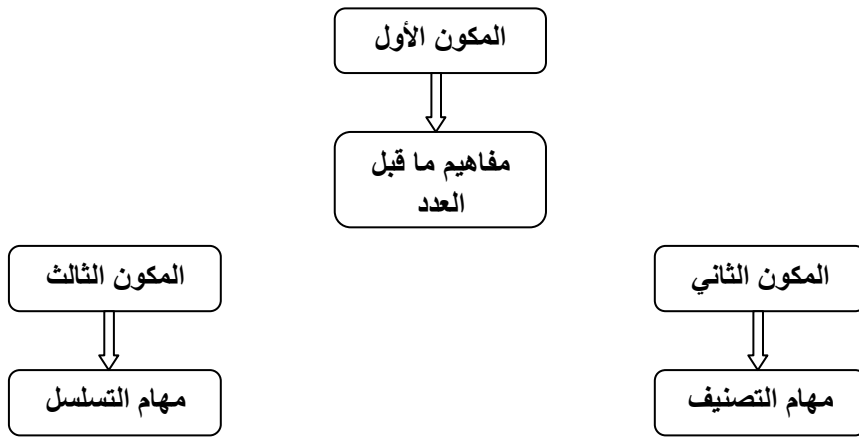
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**Reinforcement**

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**:Modeling**

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**:Dialogue and discussion**

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**:Individualized Instruction**

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# Wilcoxon Test



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Wilcoxon

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' = Z

$$Z = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}}}$$

$$Z = \frac{100 - 100}{\sqrt{\frac{50^2}{100} + \frac{50^2}{100}}} = 0$$

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### Mann-Whitney Test

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	Z					
,	'	٥٥	٥,٥٠	١٠	الضابطة	
		١٥٥	١٥,٥٠	١٠	التجريبية	
,	'	٥٥	٥,٥٠	١٠	الضابطة	
		١٥٥	١٥,٥٠	١٠	التجريبية	
,	'	٥٥	٥,٥٠	١٠	الضابطة	
		١٥٥	١٥,٥٠	١٠	التجريبية	

	٣,٧٩	٥٥	٥,٥٠	١٠	الضابطة	الدرجة الكلية
		١٥٥	١٥,٥٠	١٠	التجريبية	

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Wilcoxon Test

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### Wilcoxon Test

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$$Z = \frac{\bar{X}_1 - \bar{X}_2 - (\mu_1 - \mu_2)}{\sqrt{\frac{s_p^2}{n_1} + \frac{s_p^2}{n_2}}}$$
 where  $s_p^2 = \frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}$

### Mann-Whitney Test

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Wilcoxon

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١. مناقشة نتيجة الفرض الأول:

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( ) David, et al

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٢. مناقشة نتيجة الفرض الثاني:

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٣. مناقشة نتيجة الفرض الثالث:

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٤. مناقشة نتيجة الفرض الرابع:

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٥. مناقشة نتيجة الفرض الخامس:

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٦. مناقشة نتيجة الفرض السادس:

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Feldman,

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كلية التربية  
قسم التربية الخاصة

فاعلية برنامج تدخل مبكر باستخدام الحاسوب في تنمية بعض المفاهيم قبل الأكاديمية  
في الرياضيات لدى الأطفال ذوي الإعاقة العقلية وتعديل سلوكهم التكيفي

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**Ain-Shams University**

**Faculty of Education**

**Special Education Department**

ملخص إنجليزي

**The Effectiveness of a Computer-Based Early Intervention  
Program for Developing Some Preacademic Concepts among  
Mentally Retarded Children and Modifying Their Adaptive  
Behaviour**

A Thesis Summary

for MA degree in Education

(Special Education)

Submitted by

Abdullah Othman Saleh Alghamdi

## **Thesis Summary**

### **Introduction:**

Nowadays computer is considered a modern and important tool that is used for developing the cognitive skills among students. Moreover, the computer helps the students acquire the basic academic skills. It also helps the special needs children to learn more effectively as those children need a multisensory teaching aid that enables them to be attentive and motivate them to learn effectively. Among those children we have the mentally retarded children. Consequently, it is very important to use the computer in learning them, especially in Math teaching.

### **Study Problem:**

It is worth mentioning that the child with mental retardation differs from his non-disabled peer in the physical, mental, social, emotional and academic aspects. This in turn affects the design of programs addressed to such children either in the educational level or the rehabilitated one. Moreover, the mentally retarded children develop more slowly than normal children. Such condition makes the children suffer from problems in the learning process. Consequently, they need appropriate methods to help them overcome such problems. Computers is considered a suitable way that can help them learn more effectively. Also, they will help them modify their behaviors to be adapted with themselves.

From the above mentioned, the researcher conceptualized the study problem in the following question:

What is the effectiveness of a computer-based early intervention program for developing some pre-academic Math concepts among a sample of mentally retarded children and improving their adaptive behavior?

### **Study Aim:**

#### **The current study aimed at achieving what follows:**

- 1- Designing an early intervention program for developing some pre-academic Math concepts among a sample of mentally retarded children and improving their adaptive behavior.
- 2- The researcher investigated how effective the program is for developing some pre-academic concepts in Math among mentally retarded children.
- 3- The researcher investigated the effectiveness of the program in improving the adaptive behaviour among mentally retarded children.

### **Importance of the Study:**

The importance of the study was outlined on the theoretical level and the applied one as follows:

#### **First: The theoretical importance:**

- 1- This study deals with the field of mental retardation which is considered one of the fields that needs more research because of the shortage of researches dealt with this using computer to improve Math concepts among preschool children.
- 2- This study deals with the importance of computer in the learning process.
- 3- Improving some pre-academic Math concepts among mentally retarded children.
- 4- Shedding the light on the importance of computer for mental retardation in life.

#### **Second: The applied importance:**

The applied importance is represented in designing a scale for pre-academic Math concepts, and a program developing some pre-academic Math concepts among a sample of mentally retarded children and improving their adaptive behavior. Again, one can use the study results

for designing programs for developing other concepts among children with mental retardation.

### **Study Hypotheses:**

- 1- There are statistically significant differences between the ranks of mean scores of the experimental group in the pre and post measurement on the scale of the pre-academic Math concepts in favor of the post measurement.
- 2- There are statistically significant differences between the ranks of mean scores of the experimental group and that of the control group on the scale of the preacademic Math concepts after the treatment in favor of the experimental group.
- 3- There are no statistically significant differences between the ranks of mean scores of the control group in the pre and post measurement on the scale of the preacademic Math concepts in favor of the post measurement.
- 4- There are statistically significant differences between the ranks of mean scores of the experimental group in the pre and post measurement on the adaptive behaviour scale in favor of the post measurement.
- 5- There are statistically significant differences between the ranks of mean scores of the experimental group and that of the control group on the adaptive behaviour scale after the treatment in favor of the experimental group.
- 6- There are no statistically significant differences between the ranks of mean scores of the control group in the pre and post measurement on the adaptive behaviour scale in favor of the post measurement.

### **Study Methodology:**

The experimental method was employed in this study to investigate the effectiveness of the computer-based program

Independent Variable for developing the preacademic math concepts  
dependent Variable among mild mentally retarded children and improving their adaptive behaviour.

### **Study Sample:**

The sample of the study consisted of 20 children. These children's age ranges between 8,1 to 11,8 years of age and their IQ ranges from 52 to 73. This sample is divided into the following groups:

- Experimental group (10 children) (5 males, 5 females).
- Control group (10 children) (8 males, 2 females).

### **Study Tools:**

Draw a Person Test (Prepared Goodenough-Harris) Standardized by Mohamed Farghaly et al., 2004.

- 1- A collecting data form of children. (Prepared by the researcher).
- 2- Family socio-economic level scale (Prepared by/ Abd ElAziz Elshakhs, 2006).
- 3- The children adaptive behaviour scale (Prepared by/ Abd ElAziz Elshakhs, 1998).
- 4- The scale of the preacademic Math concepts (Prepared by the researcher).
- 5- The computer-based program For developing Some Preacademic Math Concepts (Prepared by the researcher).

### **The Study Statistical Technique:**

To test the research hypotheses, the researcher has adapted the following statistical techniques:

- Wilcoxon Test.
- Mann\_Whitney Test.
- Median.
- Standard Deviation.

### **The Study Results:**

The Study has revealed the verification of its hypotheses. This in turn shows the effectiveness of the program used for developing Some Preacademic Math Concepts and improving the adaptive behaviour among a Sample of mild mentally retarded children.

للتواصل

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