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**Designing and Building Program of Computer Instructional Software
and It's Efection on Some Linguistic
Skills of Kindergarten Children**

**Ph.D. in Education Dissertation
Curricula Teaching Methods and
Educational Media and Technology**

**A thesis submitted n partial fulfillment of requirements for the
degree of Doctor of philosophy In Education
(English curricula and Instruction-Education technology)**

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I. An Introduction:

Technology has become one of the main elements in current world. It has played a great role in developing and modernizing individual and society. In addition, it has been intensively used in different aspects and fields of our life. Education is one of the main fields, which have been directly influenced by using technological instruments general and computer in particular.

These are a general agreement among educators, psychologists and sociologists that childhood is the most important stage of individual's life. During this stage, the child has the aptitude to learn many things especially psychomotor skills. He can learn languages and has the ability to deal with instruments. In addition, childhood is the stage during which talents can be easily discovered and developed.

It is obviously that computer plays a main role in developing different psychomotor skills of children. Findings of many studies assured that computers have been used for developing linguistic skills.

Therefore, Investigating of how to use programs of computer instructional software in developing linguistic skills of children in our Saudi Arabian Society has become necessary in order to identify how that can be done.

2 – Statement of the problem:

This study tried to achieve its objectives through answering the following research questions:

1. What are the basis and operational steps of designing and building a program of computer instructional software for developing linguistic skills of kindergarten children?
2. What is the effect of a program of computer instructional software in developing linguistic skills of kindergarten children in reading and writing ?
3. What is the effect of a program of computer instructional software in developing linguistic skills of kindergarten children in reading readiness?
4. What is the effect of a program of computer instructional software in developing linguistic skills of kindergarten children in writing readiness ?
5. Is there a significant statistical difference between boys and girls in mastering reading ad writing skills after they've been taught by the suggested software ?

3 – Hypotheses of the study:

This study tried to test the following statistical hypotheses:

1. There is no significant statistical difference at 0.05 levels in the mean of Intelligence test A-Z scores and checklist of reading aptitude between children who are taught by using the program of computer instructional software and

those who are taught by using the traditional method of teaching before the application of the program.

2. There is no significant statistical difference at 0.05 level in skills of reading and writings between children who are taught by using the program of computer instructional software, and those who are taught by using the traditional teaching method before the application of the program.
3. There is no significant statistical difference at 0.05 levels in the skills of reading between children who are taught by using the program of computer instructional software and those who are taught by using the traditional teaching method after the application of the program.
4. There is no significant statistical difference at 0.005 levels in the skills of writing between children who are taught by using the program of computer instructional software and those who are taught by using the traditional teaching method after the application of the program.
5. There is no significant statistical difference at 0.005 levels in skills of reading and writing between children who are taught by using the program of computer instructional software and those who are taught by using the traditional teaching method according the gender.

4 – Rationale of the study:

The rationale of this study and its findings and recommendations is:

1. It is interested in one of the most important field of study. This field is related to how to use computer in teaching / learning process in pre-school stage.
2. This topic reveals many suggested studies for further research.
3. This study with its related literature and conclusions can enrich the field of curricula and teaching methods and educational technology in pre-school and primary stages.
4. This study can assist the educational stakeholders to rethink about curricula and teaching methods for pre-school children.

3 – Limitations of the study:

This study was limited as:

1. The target population of this study was children of kindergartens at El-Reyadh City.
2. Kindergarten of King Saud University was chosen for the experiment because of its facilities and equipment.
3. The experiment was applied on children aged between 5 – 6 years.
4. The sample of the study consisted of male and female children.

6 – Definition of Terms:

The main terms of this study were defined. These terms were. Skill, linguistic skill, reading skill writing skill, programming, and education computer.

7 – Research methodology :

In accordance with the aims and nature of this study quasi-experimental research method was used as the main research method.

8 – Sample of the study :

The sample of the study consisted of 124 children. This sample was randomly drawn. It was classified into two equivalent groups, experimental and control group. Each group consisted of 62 children (31 male and 31 female children).

9 – Tools of the study :

In order to achieve its objectives, researcher designed and used the following tools :

1. She designed pre and post test of reading and writing skills.
2. She designed a checklist for evaluating reading aptitude.
3. She designed a program of computer instructional software for developing reading and writing skills of a kindergarten children.
4. She applied Intelligence Test A-Z.

5 – Experimental Design :

Teto group experimental design was used for achieving the objectives of this study:

- a. The experimental group on which the program was applied.
- b. The control group, which was taught by the traditional method.
2. Members of the sample were distributed between the two group's equivalent according to gender, intelligence scores and scores on aptitude checklist of linguistic skills.
3. Pre-test was applied on the experimental and control group members before the experiment and post test was applied at the end if it.

11 – Statistical Analysis :

In order to interpretate and analyze the data of this study, many statistical method were used such as the mean, person coefficient of correlation Alfa kronbakh coefficient and T-test.

12 – Conclusions of the study :

Analysis of the data concluded that :

- a. There are significant statistical differences at 0.001 level between the two groups in the mean of scores on post – test for developing reading skill for the experimental group.
 - b. There are significant statistical differences at 0.001 level between the two groups in the mean of scores on post – test for developing writing skill for the experimental group.
 - c. There is no significant of statistical differences between male and female children of the experimental group in the mean of reading achievement. This means that gender has no effect on reading achievement.
- 4 – There is no significant statistical difference between male and female children of the experimental group in the mean of writing achivenment. This means that gender do has no effect on writing achievement. This means that gender do has no effect on writing achievement.

In accordance with these findings this study revealed that

1. Instructing children by using this program of computer instructional software can help them in learning and developing some linguistic skills.
2. Program of computer instructional software can help in developing reading and writing skills of children.
3. Gender has no effect on using the program of computer instructional software in developing linguistic skills.

12 – Suggested recommendations :

In accordance with its theoretical framework and results, this study recommended that :

1. Kindergarten instructions have to be equaled with educational computers and its facilities.
2. Using computer programs for developing skills of reading and writing of pre-school children.
3. Raising positive attitudes toward using computer in teaching / learning process among teachers, administrators , managers and advisors of kindergartens.
4. Computer courses have to be intensively taught in the colleges of education.

13 – Studies for Further research :

This study can recommend the following studies for further research :

1. Similar studies on pupils of the first years of primary stage can be investigated.
2. A study of teaching children of kindergartens reading and writing by using virtual reality.
3. Using computer programs for discovering and developing creative thinking of children , kindergartens.
4. Using computer for developing positive attitudes toward reading and writings among children of kindergarten.