Abstract

Problem of the current study is related to the need of pre-school children to develop the skills of listening comprehension, which required preparation of a computer program based on working memory tasks in line with the growing use of technology in education in general and kindergartens in specific in order to support working memory tasks to the children of that stage, and its impact on the acquisition and development of their listening comprehension skills.

Experimental method is applied in this study on a sample of children in KG 2 consisting of (64) children: (32) experimental group and (32) a control group. The study used two scales to measure listening comprehension skills: the first an assessment (by the teacher) and the second is computerized "related to the children". The researcher also designed a computer program on working memory tasks for pre-school children.

The results indicated the effectiveness of the computerized program based on the working memory, including the functions contained therein, and that training on working memory tasks leads to the development of listening comprehension skills for pre-school children.

The study recommended the need to take advantage of
the current study program in the training of pre-school children on the working memory in order to improve their listening comprehension skills.

**Keywords:**
Pre-school child - working memory – listening comprehension – Computerized programs.

**Summary of the study:**
Interest in early childhood stage is one of the most important standards for advanced nations because it is the critical formative period in one's life, where first seeds of his personality are planted. Perhaps that is the reason why the researchers in the field of psychology emphasize the need to pay attention to cognitive processes, such as memory for being one of the most important cognitive processes that help functions of other abilities. Remembering is the mental process that enables an individual to recall previous information.

The working memory is the cognitive system where information is stored and processed. It is also considered an important source for retention and dissemination of information protecting it from quick loss. Observers of the results of researches find that working memory has a major role in comprehension and learning
processes. The child may face early linguistic problems to understand the meaning of a lot of words.

**Problem of the study**

Scarcity of programs that train pre-school children on working memory tasks in spite of its importance in developing their listening comprehension skills.

**The main question of the study:**

What is the effectiveness of a software program based on the working memory tasks in the development of listening comprehension skills of pre-school children?

**Hypotheses:**  
1 - There are significant statistic differences in the post-measurement between the mean scores of the experimental and control groups on a scale of assessing listening comprehension.
2 - There are significant statistic differences in the mean scores of pre and post scales of the experimental group on a scale of assessing listening comprehension.
3 - There are no significant statistic differences in the mean scores of pre and post scales of the control group on a scale of assessing listening comprehension.
4 - There are significant statistic differences in the post-scale between the mean scores of the experimental and
control groups on a scale of computerized listening comprehension.

5 - There are significant statistic differences in the mean scores of pre and post scales of the experimental group on a scale of computerized listening comprehension.

6 - There are no significant statistic differences in the mean scores of pre and post scales of the control group on a scale of computerized listening comprehension.

7 - There are no significant differences between the mean scores of post and consecutive scales of the experimental group on a scale of assessing listening comprehension.

8 - There are no significant differences between the mean scores of post and consecutive scales of the experimental group on a scale of computerized listening comprehension.

**Limits of the study:**

The present study focused only on pre-school children, KG2, including 64 children (boys and girls): (32) control group and (32) experimental group at The Martyr Mustafa Ahmed Ali school.

**Study Tools:**
- Scale of assessing listening comprehension (related to the teacher)
- Scale of the computerized listening comprehension of pre-school children (related to children)
- A software program on the working memory.
- Draw a man test

**Methodology:**

Use of the experimental approach which depends on the design of control and experimental groups applying pre and post scales.

**Results of the Study:**

Training on working memory tasks lead to the development of listening comprehension skills for the pre-school child.

**Recommendations of the study:**

Through access to references and previous studies and the results of the study, the following are recommended:

1 - the need to apply the current program on all pre-school children in order to improve their listening comprehension skills.

2 – Developing computer training courses for kindergarten teachers on the cognitive processes.

3– The family has to pay attention to development of the cognitive processes of the child because of their significant
impact on his/her success.

4 - Development of comprehension skills because of its impact on the social and cognitive growth of the child.

5 - Targets of the pre-school stage shall focus on development of the working memory tasks and listening comprehension skills.

6 – Supply kindergarten rooms with the latest computer hardware.

7 - Encourage kindergarten teachers to use appropriate teaching strategies to develop skills of the children.

8 – Provide specialized training courses on development of the working memory of children for kindergarten teachers.

**The study and proposed researches:**

Through results of this study the researcher suggests the following:

- Provide a number of programs for the development of working memory for children with hyperactivity syndrome and attention deficit.

- Provide working memory programs for children with learning difficulties.