

# The Effect of Using Kidspiration Strategy for Teaching KG2 Students at Morganite International School at Al Tafila

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## Abstract

The study aimed to reveal the effect of a training program based on the Kidspiration technique in improving the motor visual memory of kindergarten children in Jordan. The sample of the study consisted of (1030) children and girls from Morganite kindergarten schools of the Education Department in Al Tafila City. A semi-experimental design with two experimental and control groups was used. The results showed that there were statistically significant differences in the skills of visual- motor memory between the mean of the experimental group and the control in the post test. The difference was in favor of the experimental group, and there were no statistically significant differences in motor visual memory skills due to the gender variable or gender interaction with the group.

**Keywords:** Kidspiration, Motor memory, Visual memory, Kindergarten.

## Introduction

Many theories have been developed in the fields of education and psychology in order to understand how students think and learn, and from these theories have been reached patterns of learning and the pattern of learning is the method used by the student to acquire knowledge, and each student has his own distinct method of learning.

The learning pattern is not what the student learns, but how that student learns. Learning styles help us explain why a student can say letters after reading them in a letter book, and another student can learn letters while playing with patterns written by letters, while another student can learn letters by singing A, B, C. Knowing a student's learning style helps teachers prepare educational experiences that are more personal and meaningful and effective. Discovering a student's learning style is discovering how this student learns more effectively.

Information and communication technology tools play an important role in observing individual differences between students, and taking into account the different learning styles of students due to their multiple capabilities, as multimedia that has a role in observing all learning patterns based on research results is used, educational programs designed to take into account individual differences allow each student to learn according to his abilities and start from the point that allows them to achieve learning according to the speed with which he can learn. Information and communication technology tools are among the best educational means ever, because of their multiple capabilities that allow addressing the senses of individuals, audio, visual and sensory.

An example of information and communication technology tools that take into account the different learning styles of your students audio, visual and motor, which is Kidspiration software.

## Kidspiration Software Overview

Using visual thinking methodologies, kidspiration provides a space for visual work in the curriculum and gives the opportunity for the learner and teacher together to activate them in the subjects from kindergarten to five years old. The browser in the software will find that it enables students to combine images, text, numbers and spoken words to develop vocabulary, recognize words, read to understand, write and critical thinking skills.

Kidspiration works the way students think and the way teachers teach. When students combine visual symbols with words, they build basic skills in reading, writing, mathematics, science and social studies. Kidspiration offers activities in all areas of the curriculum, so students can use visual learning naturally and confidently.

## Significance of the Study

The use of kidspiration in educating kindergarten children increased their love for learning and their desire to learn and increase their acceptance of new concepts and information in an enjoyable and interesting way. They have also drawn the attention of developers of the curriculum, whether the curriculum is developed, whether it is the development of the curriculum, whether it is the use of the curriculum, whether it is the traditional program

### The Study Problem and its Questions

The purpose of this study is to build a training program based on kidspiration technology to improve the skills of optical kinetic memory among kindergarten children in Morganite School in Tafila City / Jordan. The study attempted to answer the following sub-questions:

1. Are there statistically significant differences between the mean scores of the members of the experimental group and the control group in the degree of motor optical memory skills on the post-test due to the training program (Kidspiration)?
2. Are there statistically significant differences between the mean scores of the members of the experimental group and the control group in the degree of motor optical memory skills on the post-test due to gender?
3. Are there statistically significant differences between the mean scores of the members of the experimental group and the control group in the degree of motor optical memory skills on the post-test attributed to the interaction between the group and gender?

### Definition of Terms

**Kidspiration:** it provides a cross-curricular visual workspace for primary learners. Pupils use visual tools combining pictures, text, numbers and spoken words to develop vocabulary, word recognition, comprehension, reasoning and problem solving skills.

Kidspiration works the way pupils think and learn and the way teachers teach. As pupils make visual connections, they build fundamental skills in literacy, math, science and history and citizenship. Kidspiration offers activities in all curriculum areas, so pupils use visual learning naturally and confidently.

**Visual-Motor-Memory:** It is the ability to produce movements that precede visual experiences, as it includes storing kinematics sequentially, maintaining and returning them (Metwally, 2016).

### Previous Studies

Haciomeroglu & Selcuk (2012) conducted a study, this study sought to identify the level of mathematical performance of the student of the course of differentiation and integration through visual thinking using visual presentations to teach the derivation of mathematical functions. The sample of the study consisted of (183) students from five high schools, and the study revealed that there are no differences in students' preference for visual thinking due to gender. And on the existence of statistically significant differences in students' preference for visual thinking between students with high achievement and students with low achievement, and the study also revealed a strong correlation between students who prefer visual thinking and their athletic performance in differentiation and integration.

Jundia (2014) study aimed to identify the effect of using the spatial visual approach in developing some metacognitive skills in science for eighth grade students. To achieve the goals of the study, the researcher prepared a test to measure metacognition skills, whereby (the study item was applied to the test sample from (50) tests, and to achieve the purposes consisting of (80) students from the eighth grade primary students from Al Abbas Elementary School (a) The school was chosen intentionally, the study sample was chosen from it, and it consists of two divisions: one represents the experimental group and the number of its students is (40) female students, and the other represents the control group and the number of its students is (40) female students. The researcher adopted in her study the semi-experimental approach to study the effect of the independent variable, which is the visual spatial input on the dependent variable, which is the skill of metacognition. To validate the study hypotheses, the researcher used the (T) test for two independent samples. The Mann and Teny test for the differences between two independent groups, and the ETA square to measure the effect size. The study found that there were statistically significant differences at the level of significance ( $\alpha= 0.05$ ) between the average scores of students of the experimental group and their peers in the control group in the post-test of metacognitive skills in favor of the experimental group.

Abu Dan (2013) study the study aimed to know the effect of employing physical models in teaching the fractional unit on developing achievement and visual thinking skills among students of the fourth basic class in Gaza. To achieve the goal of the study, the researcher used the experimental approach. The sample of the study consisted of (60) students distributed over two semesters of the fourth grade, chosen randomly to represent one experimental group and the other the control group. After adjusting the study tools, the independent variable "employing the sensible models" was subjected to experimentation and measuring its impact on the first dependent variable "achievement" and on the second variable, "Visual Thinking Skills", was carried out and the researcher reached the following results: There are statistically significant differences at the level of ( $\alpha=0.05$ ) between the average scores of female students in the experimental group and the control group in the post achievement test for the benefit of the experimental group, and the presence of statistically significant differences at the level of ( $\alpha= 0.05$ ) between the average scores of female students in the experimental group and

the control group in a test Dimensional visual thinking skills for the benefit of students of the experimental group.

Abu Ziada (2013) study aimed at examining the effectiveness of using an interactive computerized book in developing visual thinking skills in technology for the fifth basic class student in Gaza. To achieve the goal of the study, the researcher used the experimental approach. The sample of the study consisted of four divisions, whose number reached (120) students, divided into four classes for the fifth basic class. Two divisions were randomly chosen to represent the experimental group and the remaining two divisions. The study was carried out and the study found that there were statistically significant differences at the level of ( $\alpha = 0.01$ ) between the average degrees of female students in the experimental group and their peers in the control group in the visual thinking test in favor of students of the experimental group.

Al-Ashi (2013) study this study aimed to reveal the effectiveness of a multimedia program for developing the scientific principles and visual thinking skills of the sixth basic student in the science subject in Gaza. The researcher used the descriptive analytical approach and the experimental approach where the study sample (92) students choose from the sixth grade student, where the sample was distributed to two groups, one of which is experimental, and they are (47) students and the other is a number of (45) students. The researcher used a test for scientific principles and another for visual thinking skills. Among the most important results of the study were the effectiveness of the program used in developing scientific principles and visual thinking skills, and the presence of statistically significant differences between the mean scores of students of the experimental group and students of the control group in testing the scientific principles and visual thinking skills for the benefit of students of the experimental group.

Mohammad (2010) study aimed to verify the extension of the effectiveness of a multimedia program to develop creativity skills for a kindergarten child, and the sample consisted of 33 boys and girls from Damietta Governorate. Statistically significant differences at level 05.0 between the mean scores of children of the experimental group in the pre and post application of the creativity scale in favor of post application.

## **Methodology**

### **Study Approach**

In light of the main objective of the study, this is to know the effect of a training program based on the technology of kidspiration in developing the skills of visual memory of children enrolled in kindergarten, the experimental approach was used using the semi-experimental design, because it is considered the appropriate approach to the nature of the study and its objectives, so the group and the group's research and that of the group.

### **The variables of the study**

#### **The variables of the study were:**

The independent variable: teaching method and has two levels (Kidspiration, the usual method)

Dependent Variable: Developing motor visual memory skills in kindergarten children.

### **Population of the Study**

The population of the study consists of all children enrolled in kindergarten in the city of Tafila, who numbered (2120) children according to the most recent official statistics, and their ages ranged between (4-4) years, and they are distributed in seven schools in the city.

### **Sample of the Study**

The study sample consisted of two kindergartens in kindergarten in the city of Tafila, and the sample was divided into two groups: an experimental group that was studied using Kidspiration, a control group that was studied in the usual way, and the control group was chosen from the closest kindergarten to the paradigm, and the group was from the closest kindergarten to the parterre The control group includes (220) children and (228) children, and the number of children in the experimental group are (290) children and (292) girls in the academic year 2018/2019.

### **Control of variables affecting the experiment**

Variables that may affect the efficiency of the independent variable are set, as follows:

**Age:** Children's records were reviewed to ensure equal age, and ranged between (4-6) years.

**The socio-cultural and economic level:** The researcher selected the sample individuals from Tafila city, and in a society characterized by similarities in the cultural, economic and social levels, and from two close kindergartens, to ensure access to parity and homogeneity among the sample members.

### **Content and number of activities:**

- The researcher was keen to study the children of the two groups: the experimental and the control the same content, as the application started and the concepts explained in the second semester of the academic year 2018/2019.
- Ensure that the two groups are equal in the acquisition of scientific concepts by specifying the initial level for the children of the experimental group and the pre-controlled group, before the

experimental group is taught according to the use of the Kidspiration. Table (1) shows the distribution of children according to the study variables.

**Table (1): Distribution of study members by group, school, and gender**

Group	School	Gender	Total
Experimental	Morganite International	Male	290
	School	Female	292
Control	Najd School	Male	220
		Female	228
			1030

### Study Tools

#### Kinetic visual memory skills test

It is a non-verbal test to measure the ability to reproduce symbolic forms of short-range memory, and includes measuring the following characteristics: Summoning visual codes from memory, Visual sequence ability, Visual association skills, Motor visual ability, Visual integration ability, Skills related to symbolic integrity, Motor visual ability, Visual integration ability, and skills related to symbolic integrity. It consists of ten letters, each in a box under which a specific symbol is associated with it. The child only has to connect a line between the image and the first letter of it inside the box.

#### Test Reliability

The test stability values were calculated in two ways:

##### The first method

Split-half method (odd-even) and the resulting values were corrected using the Spearman-Brown equation. The corrected half-reliability coefficients for the modified image were (0.884).

##### The second method

Using the Cronbach alpha equation, where the value of the modified image in the total sample was (0.791)

#### Validity of the test

The significance of the validity of the test was extracted by the method of Concurrent validity:

Where the correlation between performance on test and performance on kinetic optical integration and visual analysis tests was used, the value of the correlation coefficient with the motor-visual integration test was (0.896), and with the visual-analysis test (0.862), both of which are statistically significant, and of relatively high value.

#### The training program for the development of motor visual memory for children enrolled in kindergarten

This program aims to develop the visual memory skills of children who are enrolled in kindergarten in the city of Al Tafila because of their impact and effectiveness in improving the educational process, and the program consists of a set of training and activities built by the researcher.

**The overall objective of the program:** to develop the visual and kinetic memory of children enrolled in kindergarten.

#### Behavioral Goals

1. Developing children's ability to remember the stimuli that are presented to them visually.
2. Developing children's ability to remember the stimuli presented to them visually and motor.
3. The development of children's ability to remember by using a visualization strategy during different educational situations.

#### Theoretical basis for the training program

Cognitive theory is an important theory that explains how learning occurs in children, and emphasizes the links that exist between the learner's work and each of his ideas, mental skills, and this theory benefits both the teacher and the learner. Training for the learner's developmental capabilities is an important part of the pre-school and lower basic curriculum. Where the method based on task analysis and basic psychological processes is seen as a series of learned mental processes, knowledge of this chain, or the behaviors required to perform a task is considered specific; therefore it is measurable, and can be modified through training (Katami, 2016).

#### Methods included in the program

1. **Instructions:** Children are provided with information on how to implement the skill to achieve the final goal that is intended to be achieved after implementing the training steps correctly, after which the teacher explains the steps that need to be followed, and how to perform each step.
2. **Feedback:** After the children listen to the instructions, and while implementing the necessary steps to perform the task, the teacher provides the children with information about how they performed

each step to correct their mistakes, as he provides information after performing the whole task, to ensure that the goal has been achieved.

3. **Behavior Rehearsal:** The teacher asks the children to repeat the training in a variety of ways so that the skill can be mastered without help to ensure the goal is achieved.
4. **Reinforcement:** It is an important element, as the teacher promotes the behavior of children when they perform the steps that lead to mastering the task in a correct way, and the reinforcements used are varied, including what is material, including what is moral.

#### **Procedures for preparing the training program**

The researcher prepared the training program for developing the motor visual memory according to the following steps:

- Review previous educational literature and previous studies related to the subject of the study.
- Determine the training needs of children in order to establish concepts.
- The program was initially developed based on the previous literature of the topic.
- The program was presented to a group of arbitrators with specialists at the University of Al-alBayt and the Ministry of Education. The aim of the program was to find out its suitability for the Jordanian environment, the extent of clarity of its language formulation, and the appropriateness of the strategies and methods used in it to develop the visual and kinetic memory of kindergarten children.
- Based on the opinions of the arbitrators, some of the program's paragraphs were deleted, added and modified until it reached its final form that suits the goals set.

#### **Program Content**

Due to the lack of previously defined content aimed at developing the visual and kinetic memory of kindergarten children. The researcher derived the content based on previous educational literature for kindergarten children, and the following was taken into account in presenting the program content:

- Diversifying therapeutic training from a kindergarten self-learning curriculum.
- The program's training activities focus on kinetic visual memory processes.
- The current program used to participate, to interact with the teacher and children individually, or in small groups.
- Take into account the current program for the level of children, with an interest in the way to display various stimuli using Kidspiration technology.

#### **Content validity for the training program**

The program was presented to a group of arbitrators, with the aim of identifying the appropriateness of the goals, their connection to the content of the program, the appropriateness of the educational procedures used, and the appropriateness of the language formulation, for the target age group of children enrolled in kindergarten. The program has been modified in the light of the arbitrators' observations, and the percentage of agreement between the arbitrators has reached (86%). This is an important indicator of the veracity of the content and is acceptable for the purposes of the study.

#### **Evaluation**

1. **Pre Evaluation:** It aims to determine the initial level of the individuals in the study sample by applying the visual-kinetic memory test prepared by the researcher for the purposes of the study, before starting the implementation of the program's sessions.
2. **Formative evaluation (interim):** It aims to identify the progress of the study sample individuals, and the extent of achieving the behavioral goals of the program, and formative evaluation was done after each activity, and at the end of each dimension of the program, the teacher used the questions and observation in this evaluation.
3. **The final evaluation:** It aims to measure the effectiveness of the proposed program, as the kinetic visual memory test prepared by the researcher was applied, after completing the training program sessions.

#### **Program implementation**

The researcher met with a group of the teachers of the experimental group in the kindergarten covered in the study, which is Morganite Kindergarten, and explained to them the importance of the study, its purpose, and the role required of them to play, the teachers used to teach using the Kidspiration technique, where four consecutive sessions were held to introduce the teachers using Kidspiration technique. These sessions lasted four and a half hours, distributed over three days, then the researcher gave two classes using Kidspiration in the presence of the parameters in order to clarify the method of implementation, and answer the questions of the

teachers, the teachers then carried out two lessons with Kidspiration in the presence of the researcher, and the method of implementing the parameters for the class was discussed, and the positive and negative points in it were examined, in order to improve performance, and the researcher attended two classes per week at each teacher while teaching using Kidspiration, to check on their implementation in the required manner, and to discuss and discussing new matters.

### Results of the Study

**First: Results related to the first question**, which states, "Are there statistically significant differences between the mean scores of the members of the experimental group and the control group in the degree of motor visual memory skills on the post-test attributed to the training program (Kidspiration)?"

To answer this question, the mean and standard deviations were calculated for both groups: experimental and control in children enrolled in kindergarten for pre and posttests, as shown in Table (2)

**Table (2): Arithmetic mean and standard deviations for the grades of children enrolled in kindergarten on the pre and post visual motor memory test according to the group variable**

Group	N	Pretest		Posttest	
		Mean	Standard deviation	Mean	Standard deviation
Experimental	582	27.92	5.827	51.55	3.699
Control	448	28.69	6.514	44.18	4.820

It is noted from Table (2) that the mean scores for the experimental group on the pre-test were (27.92), while the mean scores for the members of the experimental group on the post-test (51.55), the scores of the group controlling the pre-test (28.69), while the mean scores of the individuals controlling the pre-test (44.18).

To find out the significance of these differences between the arithmetic averages and determine their direction, a co-variance analysis (ANCOVA) was used and Table (3) shows the results of this analysis.

**Table (3): Analysis of the co-variance of group effect in children enrolled in kindergarten in the motor visual memory test**

Source of variance	Sum of squares	df	Mean squares	F	Sig
Pretest	0.089	1	0.089	0.005	0.944
Group	6845.658	1	6845.658	383.081	0.000
Error	9149.434	512	17.870		
Total	1219728.00	515			

It is clear from Table (3) that the differences between the mean scores of the two groups: experimental and control are statistically significant, where the value of "F" (383.081) is statistically significant at the level of significance (0,000); therefore, the first null hypothesis is rejected, and the alternative hypothesis is accepted, meaning that there are statistically significant differences at the level of significance (0.05  $\alpha$ ) between the average scores achieved on the test of visual kinetic movement between the members of the experimental group (which were trained) and the average scores of the members of the control group (Not trained).

### Second: Results related to the second and third questions:

**The second question:** "Are there statistically significant differences between the mean scores of the members of the experimental and control group in the degree of visual kinetic memory on the post-test due to gender?"

**The third question:** "Are there statistically significant differences at the level of significance ( $\alpha \leq 0.05$ ) between the mean scores of the experimental and control group in the kinetic memory test due to the interaction between the group and gender?"

The arithmetic mean, and the standard deviations for each of the two groups: male and female on the pre and posttests, and table (4) illustrates this.

**Table (4): Arithmetic mean and standard deviations for male and female grades on pre and post tests**

Group	Gender	Male		Female		Total	
		Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
Experimental	Pre	27.56	5.758	28.28	5.893	27.92	5.827
	Post	51.75	3.651	51.35	3.748	51.55	3.699
Control	Pre	28.96	6.725	28.42	6.322	28.69	6.514
	Post	44.23	4.928	44.14	4.735	44.18	4.820

It is noted from Table (4) that the mean of the male scores on the post-test in the experimental group was (51.75), while the average performance of the males in the control group was (44.23). The average female scores on the post-test in the experimental group were (51.35), while the average female scores in the control group (44.14). To find out the significance of these differences between the arithmetic averages and determine their direction, the co-variance analysis (ANCOVA) was used for the group and gender impact and interaction between them, and Table (5) shows the results of this analysis.

Table (5): Analysis of the co-variance of group and gender impact and interaction between them in children enrolled in kindergarten on the motor visual memory test

Source of variance	Sum of squares	df	Mean squares	F	Sig
Pretest	0.187	1	0.187	0.010	0.919
Group	6845.155	1	6845.155	382.071	0.000
Gender	7.592	1	7.592	0.424	0.515
Gender*Group	3.220	1	3.220	0.180	0.672
Error	9137.133	510	17.916		
Total	1219728.00	515			

It is noted from Table (5) that the differences between the mean scores of males and females in the motor visual recall did not reach the level of statistical significance, where the value of P (0.424), and the level of significance (0.515), it is greater than the significance level used in this study ( $0.05 \leq \alpha$ ), which means acceptance of the null hypothesis and that there are no statistically significant differences between males and females in the skills of visual- motor memorization. As for the interaction between the effect of the group and gender, the differences did not reach the level of statistical significance as well, as the value of P (0.180), and the level of significance (0.672), it is greater than the significance level used in this study ( $0.05 \leq \alpha$ ), which means acceptance of the null hypothesis, that is, there are no differences in kinetic visual recall due to the interaction between group and gender.

### Discuss the Study Results

#### Discuss the Results Related to the First Hypothesis:

The first hypothesis stated that "there are no statistically significant differences at the level of significance  $\alpha \leq 0.05$ ) (between the mean scores of the experimental and control group members in the degree of kinetic visual memory on the post-test attributed to the training program". The results of the polymorphic analysis showed that there were statistically significant differences in the level of motor visual memory skills between the experimental group and the control group, and the differences were in favor of the experimental group. Where there were statistically significant differences between the members of the experimental group (that were exposed to the training program) and the control group (that were not exposed to it), and the difference was in favor of the experimental group.

The researcher did not find, within the limits of her knowledge of previous studies, any study whose results are consistent with the results of the current study, or contradict her, because there is no study within the limits of the researcher that dealt with the relationship between infographic and kinetic visual memory skills in kindergarten children.

The improvement in the level of kinetic visual memory among the experimental group members can be attributed to their impact on the program, which aimed to develop their visual kinetic memory using a modern technique, which is infographic. The training skills provided to them during the sessions of the program came to meet their need to remember what they would like to learn during their exposure to various educational situations, which improved their level of performance in the visual and visual memory according to the clear educational procedures that they learned through.

The experimental group members' mastery of learning visual kinetic strategies has been subjected to exposing them to all training components such as: giving instructions, feedback, behavioral practice, diversified reinforcement, modeling and homework. Perhaps individual education within small groups (4-5) children in each training group within the experimental group had the advantage of giving better opportunities to apply the educational skills, and facilitated their follow-up from the teacher, which led to an improvement in the level of their performance in the motor visual memory.

#### Discuss the Results Related to the Second and Third Hypothesis

The result of this study can be attributed to the fact that training in memory strategies is not affected by the sex of children, in the sense that the training program for the development of motor visual memory was effective for both sexes equally in the group of children enrolled in kindergarten.

The absence of statistically significant differences can also be attributed to the gender of children in the scores achieved on the visual kinetic memory scale. However, the age of children in the target group (4-6 years)

does not show clear differences in the educational capabilities between males and females. Differences begin with differentiation between males and females from the end of the age of ten or eleven.

The researcher did not find, within the limits of her knowledge of the previous studies, any study whose results are consistent with the results of the current study, or contradict her, because there was no study within the limits of her science that dealt with the relationship between the technique and the skills of visual-motor memory in kindergarten children.

#### **Recommendations**

In light of the results of this study, which showed the effectiveness of the training program in developing visual and motor memory in the category of children enrolled in kindergarten, it recommends the following:

- The kindergarten curriculum should include Kidspiration technology that suits this stage.
- Recommendation to the Ministry of Education to hold courses to train kindergarten teachers in converting educational material into Kidspiration technique and use it in class.
- Kindergarten teachers should use Kidspiration educational technology to teach children along with other teaching methods.
- Include teacher preparation programs for the learning abilities of Kidspiration in planning, implementing, and evaluating teaching.

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