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THE EFFECT OF USING COMPUTERIZED PHOTOS IN ACHIEVEMENT OF THE FIRST INTERMEDIATE GRADE STUDENTS IN THE DEVELOPED SCIENCE SUBJECT

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Abstract

The aim of the research is to find out the effect of using computerized photos in the achievement of the first intermediate grade students in the developed science book.

The study was limited to students of the first grade intermediate in the Hariri secondary school for girls and belongs to the province of Baghdad / second Rusafa and in the first term of 2017/2018,

A random sample consisting of (A) section in about (25) students was selected as experimental group. It was studied according to the computerized photos and the (B) section in about (25) students as a control group and studied according to the normal method.

The two groups were rewarded in the IQ test , the previous information test and the achievement of the students in the final exam for the sixth grade in the advanced science subject.

The basic concepts in the first unit / first chapter / cases of the material and its molecular properties have been taught and includes lesson 1, 2, 3 0

And in the second chapter / atoms, elements , compound and includes lesson 1, 2, 3 0 of the advanced science book and using the computerized photos of the lesson and presented on the PowerPoint machine with the LCD , ask the amended questions by using computer, so the results for the benefit of the experimental group and the search submitt some recommendations and suggestions.

The problem of the research

The expansion of scientific knowledge and the diversity of science made the difficult to acquire scientific concepts for learners, which led to prepare of positions and activities that help them to practice mental processes properly and to facilitate their learning process and application, Which led some of them to use different teaching methods in order to improve the level of acquisition of that knowledge, and the science is considered one of

the experimental and applied lessons, which many students have difficulty in understanding its subjects because of the diversity of topics and their uses.

Many teachers of science are still to rely on conservation and memorization in teaching, which is reflected the low academic achievement of students, as well as the paid more attention to the theoretical aspect than using the available techniques at the school (Al-Tamimi, 2006).

The researcher tried to identify the reasons for the low achievement in the advanced science from the point of view of the science teachers of the intermediate stage, by directing an open questionnaire to (20) male and female teachers in science subjects who have experience in teaching of the intermediate stage.

The questionnaire included two questions:

Q 1 / What are the reasons for low achievement in the advanced science subject?

Q2 What are the methods used by teachers in the school in the advanced science subject?

Most of their answers confirmed that the low achievement was due to the lack of teachers' use of modern teaching methods and the reliance on the usual method.

As well as the absence of well-equipped model laboratories, in addition to the educational tools and photos related to the curriculum subjects, it is necessary to find a solution to this problem, The researcher has contributed to the use of educational technology in teaching, such as educational means or computer photos, because of their effect on the development of thinking among students and to communicate their senses trying to attract their attention and contribute to improve teaching and make it more meaningful and rounded information in a wider and can be easily retrieved: the problem can be determined by the following question:

- What is the effect of using computerized photos in the achievement of first-intermediate grade students in the advanced science subject?.

The Importance of the Research

In order the education to achieve its objectives, it must be based on the curriculum, which is the practical translation to the goals of education and trends in each society, the curriculum in its contemporary concept includes the experiences provided by the teacher to the learner within its borders or outside in order to help them to grow their personalities in all aspects and in line with the educational goals . (Al-Deeb, 1983)

The curriculum is an important factor of the educational process, which is the education tool that achieves its goals and reach the student to the maximum possible to highlight his energies and reveal his abilities. (Shayab, 2001)

In order for the science curriculum to achieve its objectives, it is necessary to provide appropriate teaching methods through which the content of the curriculum and its experiences will be transmitted to the learner to stimulate the interaction with those experiences that lead to achieving the desired goals. (Raji, 2003)

The book of science is considered from the important subjects because it is directly related to human life and society because it explains many natural phenomena and life also includes a number of facts and concepts, laws and

requires the adoption of methods of teaching science that helps learners to build knowledge in a meaningful way. (Wang, 2003).
Science is also one of the topics that depend on creativity, insight, experimentation and mental skills, which require patience and knowledge of all new matters continuously. (Hijazi, 2008)

Therefore, increased the interesting in teaching of the developed science and the need to take care of methods and factors of development, innovation and improvement on the various aspects of the process of teaching and to diagnose problems and difficulties that exceed the achievement of its objectives as a a studying subject.

(Dujaili et al., 2010)

Recently, attention has been paid to the use of more effective methods of learning, such as learning methods that require positive learning.
Many studies have pointed out that science in general is taught in our schools in a way that requires abstract thinking. This leads to difficulty in learning and understanding the concepts in that subject. The importance of science learning lies in the fact that it takes photos of structures that enable students to construct and integrate them with previous knowledge and experiences. , To be integrated with it and become part of the knowledge stock that will be employed in later stages of study. (Salamat, 2007)
In addition, the learning by computer is a modern technology. It is possible to provide individual educational subjects to the learner directly. The interaction between the students and the educational programs provided by the computer depends on making them more effective and influential in the student to achieve the goals for which these programs were developed and increasing their motives towards learning..
in a systematic method that helps the student to learn effectively and achieve the desired goals according to prepared curriculum by the teacher. Computerized photos summarize by submitting the content of science in the form of a series of photos or video clips or moving pictures , in away to ensure provide a Scientific knowledge of learners resulting from the understanding of the relations between phenomena and events.

(Ibrahim, 2001)

The importance of research is summarized in the following points:
1 - Improving the reality of teaching by using computerized photos inside the school.
2 - Benefit from the study plans as a guide to the teacher by using computerized and other photos.
3 - Use them in teaching science for all stages.
4 - Raise the level of teachers in perfection the work on the computer by using software programs in the classroom.

Research Aim

The aim of the research is to find out the effect of the use of computerized photos in the achievement of the first intermediate female students in the developed sciences subject. To achieve this objective, the following hypotheses must be validated:
here was no statistically significant difference at the level of significance (0.05) between the average scores of the students of the experimental group,

which is taught according to the computerized photos and the second group which was studied according to the usual method of achievement..

Research limits

Research is limited to:

1 - students of the first intermediate / Al-Hariri secondary School for girls in the province of Baghdad / Rusafa II.

2 - The first term of 2017/2018

3 - The first unit / Chapter I: Characteristics of the material

Lesson 1: Cases of the material and its molecular properties

Lesson 2: Measuring the size of the material

Lesson 3: The mass of the material and its density

Chapter II / atoms, elements and compounds includes:

Lesson 1: atom Components

Lesson 2: Ion and molecule

Lesson 3: Chemical compounds

Terminology:

1 - known (Al-Shahrani, 2000):

Are those experiences that are presented to students on the computer screen in order to clarify the idea or law, or scientific phenomenon, or how the work of a scientific set. (Al-Shahrani, 2000).

1- (Al-Najdi, 2005) Identification

A method of self learning methods in which the learner learns by himself according to his personal speed by interacting with a program that gives him information in small steps called borders, This information is presented in a programmatic book, and the educational machine, program played a role towards specific goals through experiences that require specific responses to a variety of questions, and the learner's motivation increases through the continuous reinforcement process that feeds back through his immediate knowledge of the results of his response. (Al-Najdi, 2005)

2 - (Al-Shnaq and others / 2009) Identification:

Is a set of techniques and methods for presenting facts, concepts, ideas, procedures and principles. A presentation can be designed using only single or multi-text presentation, graphics, photos, audio clips, video clips, animations and electronic video effects. (Al-Shunaqet al., 2009).

Chapter II
Theoretical background

Photos:

Through photos can display some ideas and concepts visually easy to understand, better than oral or written, and in composition of modern photos involved a lot of means, such as photos, drawings and lines of different types of graphical lines with verbal explanation, and take into account in their production the purpose of the use, and the type of learners provided to them and their characteristics in addition to follow the technical rules in the output of photos, and paintings such as the choice of address, and written in a large and clear,

Also the use of different colors and taking into account the differences between them to confirm the elements of the subject to be clarified and the arrangement of exhibits and vary the method of preparation of photos and

use according to the main purposes of their use can be limited to three main purposes:

1. Provide a good subject or presentation and the desire to raise the interest of students in this case may be limited to the source to display some important photos or words that relate to the subject of the study.

2 - Clarifying the main elements of the subject and the important problems contained in the subject and presented logically illustrate the relationship between these elements and the order of importance and all these elements are presented by using a variety of means

One of these elements may be presented by photos while the other is presented by statistics, graphs or samples or models is accompanied by some of the main questions that are clearly related to the subject.

3 - Summarize one of the subjects after the completion of the study so that the photos gives the main questions that have been studied and the important points in answering each question, they are in fact gathered the parties of the subject and summarize it. (Al-Ayasra, 2003).

Types of photos: There are several types of photos

1- Sequential Time photos can be used in several forms. Time frames show the relationship between several events and the time they were signed, such as the photos that show the dates of the flights on a weekly basis or the successive dates of rulers and successive photos showing the steps of one of the industrial processes. All steps displays on a transparent panel that the teacher covers and reveals each step according to the lesson sequence.

2 - Classification and organization photos: To balance several sets of data should be arranged in Adjacent columns to illustrate the similarities or differences and helps the viewer to recognize the relationships between this information in terms of shape, size and color, which help to create integrated image on the subject.

From Its type

a. Track (serial) photos: The use of straight lines, arrows, circles and geometric shapes to show the functioning of one of the processes and functional relations among the elements of the process, used in industrial processes or to explain the operation of one of the devices or to teach a specific skill and it consists of several sub-skills.

B. Photos Branches: Explain the origin and branches and their sections and their relationship to each other and used to explain the divisions of different races such as the animal, plant or to clarify the functional relations, which are divided into various organizations such as ministries, companies and management.

C. Photos Flow or source of origins : They are the opposite of the previous distribution. They do not start with the original and go to the parts, but they start with the parts that relate to each other in different stages so that in the end the whole subject will be explained, for example, the steps that the stages of the car industry go through until the production of the car. (Dick Walther, 1991)

D: Experienced photos: frequently used in the first grades of study and there is in each large photo painting showing one of the concepts derived from the main subject such as cleanliness or the system or the correct habits and writes under a large line and clear sentence or several sentences,

Or key words used by the teacher in preparing the minds of learners to the importance of some subjects, or training them to read or write, and may be used several photos in a beautiful sequence of a story, And may be the sentences are written under each photo in an integrated story. Learners may engage with the teacher in the formulation of these sentences to train in order to make the story, and to realize the meaning of logical arrangement and sequence of facts and events. Some teachers rely on preparing a photos by serialization of a story, leaving each learner to express the content of each photos so that he gets used to good expression and writing story. (Ghazawi, 1990)

Computer:

It is a device that analyzes, displays and transmits information in various forms, and information has a variety of forms that may be represented as figures or letters of written texts, cartoons or animations. (Nabhan, 2008).

And that the use of computers in the educational process could achieve many of the educational goals, such as: learning to be able to self-learning and individual learning and treatment of individual differences, and develop the ability to focus and positive interaction with the subject.

(Al-Tannawi, 2008).

Learning based on computer has two main types:

1- Learning –assisted Computer:

This type of computer is most used and associated with education so that the computer, its software and its accessories are used as one of the main aids in the process of teaching and learning instead of or in addition to the usual method. This software is characterized by interacting with the learner, which distinguishes the use of computers in education from other technological means.

2-Learning managing by computer :

The use of computers in the field of management because of the features of storage of the vast amount of information. As well as the possibility of retrieval and processing of this data at high speed and accuracy, and the learning specialized computer assisted with the help of the teacher and the school administration in the organization of the management of the educational process by using specialized software.

The Reasons of use computer in learning :

1. Access to information quickly and easily.
2. Creating a society for the information period .
3 - The use of computers in the search for solutions because of the difficulty of learning and its problems.
4. Updating the methods of presenting the subject in an interesting manner.

The computer is a distinctive and integrated machine that allows great effectiveness for the learner by the communication and interaction between the learner and the educational subject, and the resulting amendment features of self-evaluation and remove the elements of fear from the part of the learner. Numerous studies have shown the role of computers in the development of learning and teaching methods, in addition to creating new educational opportunities and facilitating the process of education.

(Ashtewa et al., 2010).

Studying the photos by assist of Computer

The teacher explains the educational subject and clarifies it to the learners in the computer lab and includes the learning of the learners for that content by helping the computer, including the presentation of scientific subject and images using the (Power point) program

Includes a specific scientific subject and learning the learner through the interconnected instructions among them according to logical sequence method enables him to walk with the program that the learner could be choose the subject to be taught, and if the need to study any subject of the unit of study, can be presented images and illustrations to the learner, and give the opportunity for self-learning that any learner can submit the image or delay according to the need for study, at the same time, this type of learning increases the formation of a scientific trend among learners, or a desire to learn and enrich the teaching process through the use of computer to display the photos as a means of helping in the teaching of science and all the contents of multiple means.

This may include displaying an image with sound or animated images as well as reading texts with the use of reinforcement by the teacher in the event of questions being posed to learners and answered.

The preparation of the program is as follows:

1 **- Analysis of the characteristics of learners and choice of educational subject:** The analysis of the characteristics of learners and stand in solving the problems and difficulties that they may face in the process of learning.

2 - Content Analysis: The analysis of concepts, facts and principles and the formulation of behavioral goals to be achieved from the process of learning and illustrative illustrations and classification by Bloom's knowledge field.

3 - Design Educational Program: The design of the educational program using the computer and using the borders then arranged in sequenced educational borders to correct borders .

4 - Preparation of the educational program: By transferring of design from paper to the computer and the benefit of multimedia such as sound, image and movement and display of photo in attractive colors.

5 – Principle Experimentation of the illustrative learning : To evaluate the learning program is being tested on a group of learners individually and is modified errors and is presented to a group of educational bodies and specialists in teaching methods, measurement, evaluation, education, psychology and educational techniques and is modified in the light of their observations.

6 - The final experiment of the program: it is tested on the research sample and final form. (Al-Sawafta et al., 2010)

Illustrated photos s in the computer are concerned with arranging the relations between all and its parts and contribute to clarifying the facts, concepts and things in a visual illustration because it presents the relationships between its elements or components more clearly to the mental realization than words and that the presence of illustrations drawing in the textbook must be in order to achieve clear and specific goals such as

presentation of content where they can be used to express verbal content visually. This contributes to the formation of visual and mental concepts, which helps to understand, absorb, discriminate and eliminate abstraction.
And that such goals can not be achieved by the photos and illustrative drawing in the textbook, it must be converted to clear and colorful photos in accurate coloring and storage, retrieval and processing by the computer and according to organized and specific programs to avoid the unnecessary details in them, And reading them by the computer helps to find useful scientific conclusions since the human have two memories one of them visual and the other verbal which leads to the increase of information to remember the better since the visual memory of the human stronger than the verbal so he could recall the image more than words.
In order to be a mental image model of any photo, it is necessary to form three interconnections as follows:
1- The learner receives the educational material presented visually and then verbally represents it by constructing the interconnection of the verbal report, and then to form or build issues in memory which is important by the learner.
2 - Receiving the learner for presented material visually and construct a visual representation of it, called the building of a visual report connection, in which the learner builds imaginations in the working memory.
3- The learner shows Interconnects has a significant between visual and verbal representations. Photos are one of the oldest visual means because of easy access and low cost. They play a major role in achieving full understanding through visual experience and the formation of cognitive image in depth, therefore the method of introducing images and illustrations drawing within the technology of learning has a significant effect in the interpretation of behavior towards a more educated response. (Malak, 1995).

Previous studies:

1- Omar Study (1999):

The study was held in the city of Riyadh. aimed to identify the effect of the presentation of one of the computer programs on the academic achievement in the mathematics curriculum , The sample of the study (44) students distributed in the experimental group was studied using a (data show) of a computer program as a teaching tool, And a study of the traditional method. The results showed that there were no statistically significant differences between the two groups at the levels of remembering, understanding and application, as well as in the overall test. (Al-Omar , 1999)

2 Abdul Kareem Study , 2000): -

The study was conducted in the city of Riyadh. The aim of this study was to investigate the effect of chemistry teaching on the computer on the achievement of students of the first grade secondary, The sample of the study included two experimental groups consisting of (82) students studied using computer and a control group consisting of (78) students studied in the traditional method. The results showed no statistically significant differences between the average scores of the students of the experimental group and the control group in posttest of chemistry subject and towards subject (Al-Abdal-Kareem, 2000)

3 - Jabr, Study 2007: -

The aim of this study was to identify the effect of computer use on the achievement of the seventh grade students in mathematics, compared to the traditional method, and to know the trends of their teachers towards its use as an learning tool.

The sample of the study (94) male and female students of the seventh grade in the male and female schools of the secondary schools of the Directorate of Education in Salfit Governorate for the academic year (2006/2007).

The number of teachers (37) teachers (male and female) from the total no mathematics teachers of the mentioned grade in the province, to study their trends towards the use of computers as an learning tool, after the students divided into two experimental groups using the computer and the number of its members (47) students divided to the two sections male is (24) And female is (23) students, and another control studied by traditional method distributed in the two sections males and females, the number of each similar to the same in the experimental group, this study tried to answer the following questions:

a. What is the effect of using the computer in teaching mathematics on the achievement of the seventh basic grade students in the unit of set.

B. What are the attitudes of mathematics teachers towards using computers as an learning tool in teaching mathematics?

To answer on two questions, the researcher used a computer program that was prepared by using the Power Point program and applied the study tools to its sample,

The data were collected and analyzed using the SPSS statistical package, and the analysis of the mono variance was used to verify the equivalence of the study groups in the pre- test, the analysis of the binary variance for the effect of the two variables of the method of teaching, sex and the interaction between them on the achievement of the post-test, And the Toky test of post-comparisons between study groups, The researcher's findings are as follows:

1. There are statistically significant differences at a level of significance (0.05 = □) among the e average achievement of the seventh grade students in the post-measurement in the unit of mathematics set due to the method of teaching (computer, tradition) and in favor of the method of teaching computer. The study did not reveal statistical differences Attributable to gender or interaction between the teaching method and sex.

2 - There are positive trends in the mathematics teachers of the seventh grade basic towards the use of computers as an learning tool in the teaching of mathematics (Jabr, 2007).

Chapter III
Search procedures

1 - Experimental design: Use in this research experimental design of the partial control of the two groups (experimental and control)

scheme (1)

Group	Equivalence	Independent variable	Dependent variable
Experimental	Intelligence , previous information, the marks of the primary sixth grade	Computerized photo	Achievement
Control		Usual method	

1. The research community and its sample:

The research community represents the first intermediate grade students in Al- Hariri secondary school (25) students for each section. (a) section was selected as a experimental group and studied according to the computerized photos, and section (B), which was studied according to the usual method and was excluded (2) student who are fail as in the table (1).

Table (1)

Group	Section	Total no. of students	The excluded students	The no. of student after excluded
Experimental	A	25	**-**	**25**
Control	B	27	**2**	**25**
Total		52	**2**	**50**

2 - Equal groups:

The two groups were randomly selected and equivalence between the students of the two study groups in the first semester of the academic year 2017-2018 from 15/10/2017 to 15/1/2018

1- Intelligence.

2. Test the previous information.

3 – Achievement of students in science subject for the sixth grade primary.

First: Intelligence: The Raven test was chosen for consecutive matrices for the age group of the study sample and the Iraqi environment. It consists of (5) subtotals of drawings and each group contains (12) matrix arranged according to the principle of gradation of difficulty for drawings and incomplete forms. It needs for its complement of image alternatives below each matrix.

Under the light of the answers, IQ scores are determined.

The average intelligence of the experimental group (33) was 79.13, while the average intelligence of the control group (32.4) and the variance of 91.36, and the equalization of the two groups in this variable, the t-test was used for two independent samples. The calculated T value (0.23) Of the mean value (2.011) at the level of significance (0.05) and the degree of freedom (48), indicating that the experimental group and control are equivalent in terms of intelligence. Table (2).

Second: Test the previous information:

A test of the previous information was prepared in Appendix (2) and consists of (25) multiple choice items. All the items have been given full agreement for the validity of the items. The average scores of the experimental group (11.9), the difference (5.39), the mean of the control group (12.1) and the difference (5.99) were obtained by using the t-test for two independent samples. (0.05) and the degree of freedom (48) where the calculated T value (0.92) is less than the scale (2.011), which indicates the two sets of statistical equivalence in previous information. Table (2).

Third: the achievement of students in the final exam for the sixth grade primary in the science:

Obtained from the school administration. The average score of the students in the experimental group was 63.98 and to verify in 148.1, while the average score for the control group was 61.58 and 755.2. To verify, the t-test was used for two independent samples and there was no statistically significant difference at the level of significance (0.05) and the degree of freedom (48) where the calculated T value (0.39), which is less than the value of the table (2.011) thus the two groups are statistically equivalent in the achievement of the academic. Table (2)

Table (2)

Statistical significance of the equivalence of female students in the two research groups

Variable	Group	Number of sample members	Average account	Differential	T- value		Level of significance
					Table	Accounting	
Intelligence	Experiential	25	33	79.13	2.011	0.23	Non A statistical function at level 0.05
	Control	25	32.4	91.36			
Previous information	Experiential	25	11.9	5.39	2.011	0.92	
	Control	25	12.1	5.99			
Achievement from the final examination for the sixth grade primary	Experiential	25	63.98	148.1	2.011	0.39	
	Control	25	61.58	755.2			

4 - Research Requirements:

a. Determination of the scientific material: The main concepts were taught in the first unit / Chapter one / properties of the material and includes:

Lesson 1: Cases of the substance and its molecular properties

Lesson 2: Measuring the size of the material

Lesson 3: The mass of the material and its density

Chapter II / atoms, elements, component includes:

Lesson 1: Atom Components

Lesson 2: Ion and molecule

Lesson 3: Chemical component

B - Identification of scientific concepts:

The contents of the first and second chapters of the first unit were analyzed and their number (30) concepts

C. determined the goals and formulated them behaviorally.

Goals were determined , Formulate it behaviorally.

D. preparation of teaching plans:

A typical teaching plan has been prepared in the first chapter, the properties of the material, which includes: Lesson I / (cases of the material and its molecular properties) by using computerized photos and using the Purbuint device (Appendix 2).

E. Search Tool:

An achievement test consisting of (20) items of type (multiple choice) was prepared in the first and second chapters of the developed science book for the first grade average for the year (2017-2018). It was applied to a survey sample. The level of difficulty, the strength of discrimination of the items and the effectiveness of alternatives were measured. The wrong alternatives attracted a number of the lower group students.

F) The test is valid

The validity of the content and the virtual honesty were used and a test map was prepared to ensure that the test items were linked to the content of the educational subject and thus the test was valid. The content of the item was identical to the test and the agreement was presented to a group of specialists experts (92%)

G) Stability of the test:

The equation (Kyoder-Regardson 20) was used because the test items were objective and the coefficient of stability was 89%.

J. Statistical means:

The appropriate statistical package was used (spss)

Chapter Four

Display and Interpret Results

This chapter includes the presentation, analysis, discussion and interpretation of the results of the study, conclusions, recommendations and proposals

1 - Display the results

To verify the null hypothesis this states:

There was no statistically significant difference at the level of significance (0.05) between the average score of the students of the experimental group, which was studied according to computerized photos and the average score of the students of the control group, which was studied according to the usual method of achievement.

Table (3)

Group	No. Of students	Average account	Variety	Account t value	Account t table
Experimental	25	38.9	56.98	3.855	2.011
Control	25	32.1	71.21		

The average score of students in the experimental group was 38.9 and the variety was 56.98. The average score of students in the control group was 32.1 and the variety was 71.21. from the results of research and calculating the value of t, the (3.855) large than (t) in Table 2.011, indicating that the difference between them was statistically significant at

the level of (0.05) and at the degree of freedom (48). In this way, the null hypothesis is rejected and the alternative is accepted, ie, there is a statistically significant difference for the experimental group, which was studied according to computerized photos.

- Interpretation of results:

The results showed the superiority of the female students of the experimental group, which is taught according to the computerized photos of the female students of the control group and studied according to the usual method of achievement.

This is due to the fact that computer-assisted learning has made students more positive, learning on their own rather than giving them ready, as well as using audio, image, written texts and attractive colors to deliver educational content through the computer. Giving feedback to the students of what they learn and the proportion of proficiency, and promotion in appropriate time. timely, and the placement of students in a learning environment characterized by activity by the researcher, which increased the motivation of students towards learning and retention of what they learned on the other hand. In this way, the computerized photos allow students to remember more information and variety in the senses, in addition to the fun, suspense and the raising of mental abilities, which led to high level of achievement among female students

In addition, the use of computerized photos helps in presenting the subject in a sequential and attractive manner, and the response of female students is greater.

3. Conclusions:

Under the light of the results of the research, it was found that:

1 - Teaching according to computerized photos has a significant effect on the average of student achievement.

2 - This method has helped to raise the interest of students and encourage them to study, active learning, create an effective and positive environment.

4. Recommendations:

1 - The necessity to emphasize the use of computerized photos in teaching as they are more effective in raising the level of achievement among students.

2 - Training teachers to use this method for their great interest in raising the level of attention and excitement in making the learning environment active.

3 -Teachers definition by using computer programs because they provide less time and speed in learning and proved in the information.

5. Proposals:

1. similar study for research is made in various studying stages.
2. A similar study for research is made include computerized photos and its effect on measurement of direction towards science subject, creative meditation and solving the problems.
3. A comparison between this method of teaching and other techniques in the achievement and retention of concepts.

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Index (1)
-Achievement Test Items -

Q / 1 The material consists of a main unit:
a. The molecule.
B. Ions.
C. Components.
D. Mixtures.
Q2 / Solid state shall be:
a. Variable shape and size.
B. Fixed shape and size.
C. Variable shape and fixed size.
D. Fixed shape and variable size.
Q3 / Liquid state shall be:
a. Fixed shape and variable size.
B. Variable shape and size.
C. Variable shape and fixed size.

D. Fixed shape and fixed size.

Q4 / The inter-molecular distances in the liquid state:

a. big.

B. Medium.

C. Small.

D. Fixed.

Q5 / Movement of particles in solid state:

a. Fixed.

B. Variable.

C. None.

D. Free and restricted.

Q 6 / Process of transformation of the material from solid to liquid:

a. Fumigation.

B. Condensation.

C. Sublimation.

d. spreading.

Q 7 / Sublimation is the process of transforming material from:

a. Liquid to solid state.

B. Liquid to gaseous state.

C. Gaseous to liquid state.

Dr.. Solid to gaseous state.

Q8 / The solids are transferred to liquid by:

a. Cooling.

B. Heating.

C. Pressure.

Dr.. Condensation.

Q 9 / Crystallization is the process of separation of solid material from:

a. its saturated solution .

B. its unsaturated solution.

C. Its half-saturated solution.

D. Its over saturated solution.

Q10 / When breaking a piece of glass the change:

a. physical.

B. Chemical.

C. biological.

D. Geological.

Q 11 / The solution that passes through the filter suppression is called:

a. water.

B. leaky.

C. Deposit.

D. Amorphous.

Q 12 / Carbon combustion is a change:

a. biological.

B. Chemical.

C. physical.

D. Geological.

Q 13 / Atom consists of:

a. Electrons.

B. Electrons and neutrons.

C. Neutron only.

D. Central nucleus and electron
Q 14 / Pure materials include:
a. Elements and components.
B. Only elements.
C. only components.
D. None of the above.
Q15 / Carbon is considered as:
a. Metals.
B. Non-metals.
C. Semiconductors.
D. Noble elements.
Q16 / Iron rust is considered a change:
a. physical.
B. Chemical.
C. environmental.
D. Geological.
Q 17 / Symbol of hydrogen molecule is:
a. (H)
B. (H2)
C (3H2)
D. 2H
Q 18 / Component is a material resulting from a union of:
A. Two or more elements.
B. Two or more components.
C. Aqueous solutions and gases.
D. Mixed with element.
Q 19 / The chemical formula of the hydrogen sulphide component is:
a. H3S
T. HS2
C. H2S
D. HS3
Q 20 / Which of the following properties is not a metallic property:
a. hammer and tow ability.
B. Do not connect to heat.
C. Sparkle and luster.
D. Compression ability.

Appendix (2)
Sample of A teaching plan according to the computer photo
For experimental group students

Class: Intermediate	First	Subj. : Science	
Time: 45 Mint.		State of Material	

Behavioral Goals:
First: Knowledge Field: The student is expected to be able to:
1. Define the material.
2. Multiple cases of material.
3- Explain that the human body is a material.
4- Define solid, liquid, gaseous state.
5- showing the order of atoms in the three cases.

6. Provide solid-state examples.
7. Provide examples of the liquid state.
8. Provide examples of the gaseous state
9 - Compare the cases of the material in terms of distances between molecules and the force of attraction between them and the arrangement of molecules.
10. Define the atom.
11. Define the molecule.
12 – Define the process of fusion.
13 - Define the process of sublimation.
14. Define the Evaporation .
15. Indicate the process of transformation of material states.

Second: The skill field: Training female students on:

1 - Draw cases of transformation the material.
2 - Draw a table showing the cases of the material in terms of order of atoms.
3. Demonstrate through experience the transformation of the cases.

Third: The emotional field:

1- To appreciate the greatness of the Creator in balancing nature.
2 - Appreciation of the efforts of scientists in the interpretation of natural phenomena.
3 - Appreciation of the efforts of scientists in the discovery of atom and molecule

Teaching means:

1 - Computer.
2. LCD projector.
3 - A computerized program on the material and its components and how to transform them.
4- Port Point Projector

Introduction (5 minutes)

A simplified explanation of the material and if the human is a material. And clarify that the material is everything that forms space in the space. Then the showing of types of materials (cases of material) ask students to find other similar materials, and then the statement of water and its usefulness to humans, and can man to live without water. Then the statement of whether man is the only beneficiary of water and what form of water and what its components (atoms, molecules) and how they are connected with each other. What do you expect if there is no water in life? Then start with a graphic illustrator by using a Port Point device about the importance of water, its shape and its transformations, what the atoms are, what the molecule is and how it is formed.
If we thank God Almighty for blessing us and start with a detailed presentation of the transformations of the material as water material.

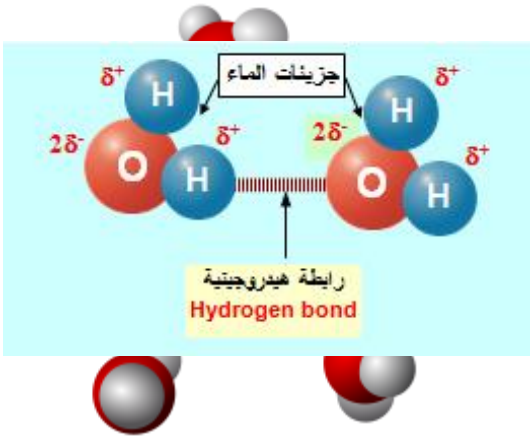
The Display (25) minutes:

After explaining the introduction of the previous lesson and the efforts of scientists in the discovery of materials to link with the current lesson, the material is defined in a simplified form and what kinds with a picture of the types of materials such as ice (solid) and liquid, such as (tea) and water with a video presentation of the composition of a molecule water.

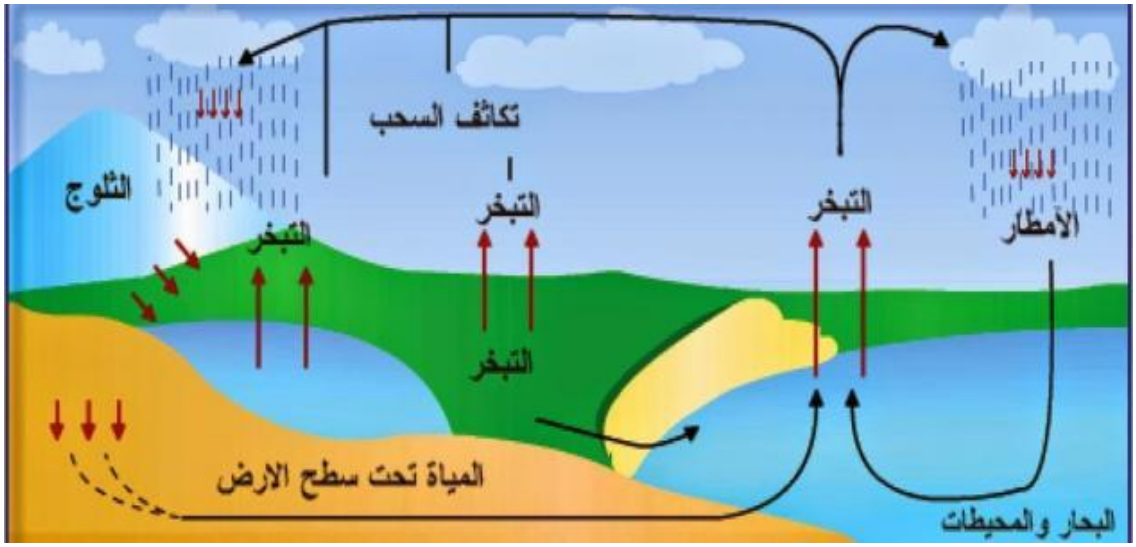
And illustrate the difference between them in terms of the correlation of atoms as well as the case of gas, where a photos are shown where the water is subject to the fire and the observation of the transition to the gas situation in video and and then displays a on the atom and molecule and how relate with each other simple definition of molecule (such as molecule) (2) A hydrogen atom and oxygen atom.

audio, photos they with a the water one

Then we ask the students a question:
Q/What is the water molecule?
A/ 2 hydrogen atoms and (1) oxygen atom.
Q / How does the hydrogen atom correlate with the oxygen atom?
(C) are correlated by gravitational forces because (H) positive charge and oxygen minus charge are called bonds or links.



Q / How do water molecules differ in solid, liquid and gaseous state?
Different in terms of correlation with each other and distances among molecules.
Q / How liquid water is transformed into solid state.
When lowering the temperature.
Q / How does liquid water turn into gas?
When water is heated.



Q: Are there objects or other materials like water in properties?
Yes like milk.
Try to draw the cases of the material through the display of computerized photos as soon as possible.
Q / So what is the benefit of water for man with all its cases?
A person shall benefit from all cases of water. When cooling, it takes advantage of the ice to get cold water in a hot climate such as summer. The heating will be used in the preparation of tea, for example. Or coffee and others, as well as in winter showers and summer washing dishes and equipments.
Photos and sound is displayed for different types of liquids:
Such as milk / tea / oil / alcohol / wood / smoke / iron

Then we ask the students :
Determine the liquid, solid, and gas materials

Answer/ Milk
Tea
Alcohol (1)
Oil

Wood
Iron (2)

Smoke – gas (3)
Q/Are all these material similar each other to start with (1), (2), (3)?
No differ in terms of link and density.
Q: Can we diagnose some of these materials ?
Yes through the forces of link distances among their molecules and their ability to compression?
So let's look at the photo presentation to illustrate some of the properties of these materials.
And write the properties of the material in terms of shape and correlation and draw a table

Activities: (5 minutes)

1 - Division of female students into groups.
2 - We ask students to find a collection of different materials and separated from each other by using computer.
3 - Request to determine the benefits of each of these materials and their common properties.

Amendment : (7 minutes)

Q / Define the following:
1. The atom 2. The molecule 3. The material 4.solid state 5. The gaseous state 6. The liquid state?
Q / What are the most important cases of the material? What is the condition of the three cases?
Q / Are all the following materials similar in properties?
Chair / iron / oil / gasoline / water / blood / smoke.
Q / How do these materials differ from each other?
Q / specify material which we can indicate the transformation of the material by using computer?
Q / display us the cases material transformation? What does a person benefit from using computers?
Homework (2 min)
Preparation of the second lesson of the first term measuring the material volume.
- Bringing photos of some materials in nature and measuring tools.

Sources: Book of Developed Science - T2-2017.

Working paper on the subject of material cases

student's name
Class

How do we discover the qualities of materials?
How do we distinguish the type of material?
Describe some of the material features
Flexibility is a one of material properties
Yeah
No

Name of the subject: The state of material and its molecular properties
Planning of computerized Lesson
Name of teacher : Estbraq Jabar

	Age group (grade / class)	First Intermediate		The time of lesson	45 Minute

	Subject of the lesson	**The state of material and its molecular properties**
	Age group (grade / class)	First Intermediate
	The aims of the lesson	• The student should know that the material in nature is in three cases • The student should distinguish that the solid material has a fixed shape and a fixed size • The student should distinguish that the liquid material has a variable shape and a fixed size • The student should distinguish that the gaseous material has a variable shape and variable size • To compare between the three cases of the material in terms of shape and size
	Terminology / enrichment	Solid, liquid, gaseous, material
	Conceptual perception of the teacher	The use of multimedia programs for presentation and the possibility of linking and presenting information in modern ways such as displays.
	Advance knowledge in the subject / skills that everything in nature is made of materials	Knowling previously in subject Skills
	21st century skills (Select Skills Adopted in planning)	A. Computerized Communication Skills: Selected Sites. B. Self-independent learning: During the implementation of tasks and knowledge building and evaluation through the viewing and solving of computerized work papers
	Assisting means	PowerPoint, computer, web.
	Educational environment (class room, lab. Computer)	Classroom
	Written educational materials	Examples: Different materials to

	internet and computer	determine their cases Computerized display Computerized worksheets exercises and Computerized activity (link) films
	Homogeneous class	Response to variety and differentiation
	Learning products	Solving exercises, activities and computerized worksheets, surfing the web
	Evaluation	Computerized worksheet, collective work

Lesson method

	**Method of the lesson**	**Description of the activity**	**Web Of computerized duty**	**Time** 
	**Opening preface**	**attendance and absence of students A film displaced for students from You Tube about the cases of the materials**	**film**	**Minutes 3**
 **Essential of the lesson**	 **Explanation (Understanding and application of terminology)**	**1-Discuss and explain the film with students through questions (What did you understand?) 2. The teacher implements the same experiment with the students**		**10 minutes**
	• Application and training	Students enter the school site	**States of material**	**15 mint**

		individually and answer the required questions		
	Enrich my information	**The student will play an applied game on the subject**	**The game of material states**	**5 minutes**
	Totally	Students draw with the teacher a scheme showing the material status and form of the material		**2 mint**
	Abbreviation	Each student will name a specific subject with the status of this material through the presentation of various materials by computer		**5mnit**
	Home work	Explain how to solve a worksheet in the activity and each student to solve this paper and send it to the teacher	**Worksheet**	**5mint**

Appendex-3-

Showing the degrees of the variables used in the group of the experimental and control group

Seq.	**Intelligence level 60%**	**Test the previous information 25%**	**The degree of achievement in science subject The exam. Of sixth primary grade 100%**	
1-	**24**	**12**	**47**	

2-	**14**	**11**	**62**	
3-	**29**	**09**	**67**	
4-	**42**	**17**	**63**	
5-	**46**	**13**	**58**	
6-	**37**	**12**	**59**	
7-	**25**	**14**	**66**	
8-	**22**	**08**	**64**	
9-	**42**	**12**	**73**	
10-	**43**	**10**	**77**	
11-	**32**	**11**	**67**	
12-	**36**	**12**	**72**	
13-	**47**	**15**	**65**	
14-	**42**	**10**	**77**	
15-	**32**	**18**	**78**	
16-	**39**	**20**	**80**	
17-	**31**	**11**	**61**	
18-	**25**	**13**	**54**	
19-	**46**	**17**	**83**	
20-	**38**	**12**	**85**	
21-	**45**	**11**	**55**	
22-	**37**	**13**	**59**	
23-	**22**	**15**	**60**	
24-	**41**	**08**	**62**	
25-	**43**	**17**	**63**	