Opcion, Año 35, Especial Nº 19 (2019): *2607 - 2620*
ISSN 1012-1587/ISSNe: 2477-9385

The Effectiveness of Employing Cognitive Trips and Geographic Atlas electronically on the Fourth –Stage- Students' Achievement of Geography

Ali Mohan Abbood, Al-Hareth Shakir Abd
College of education, University of Mustansiriyah, Department of Psychological and educational Sciences
Dr.alimohan73@gmail.com

Abstract

The objective of the current research is to find out the effectiveness of employing cognitive trips and geographic Atlas in the assimilation of geography among n fourth – secondary stage students. In order to know the results of the research, the researchers have formulated the following zero hypothesis: (There is no statistically significant difference between (0,05). The first three groups are the first experimental group to study geophysics in electronic cognitive trips and the second experimental group which is taught electronically by the atlas and the control group which studies the same subject in the usual way in the post-achievement test. (90) students have been distributed in three divisions, and was followed by the experimental research methodology with a post-design of three equal groups. The research tool is the test of the achievement of the dimension, which was damaged from (40) test paragraph of the type of multiple choice, after the truth was extracted by experts .

The results of the study, after statistical analysis, it has showed that Schiffe's tests of bilateral dimension comparisons were higher than those of the two experimental groups in the control group. The researchers have concluded that cognitive trips and geographic atlases are effective teaching methods in increasing the level of immunization For the fourth-stage students / literary in geography. Moreover, the superiority of the students of the two experimental groups is attributed to the students who studied in the usual way for these two teaching methods of the effectiveness of educational science in stimulating the love of the subject and to stimulate mental and self-activity among the fourth grade students.

The researchers recommend the adoption of cognitive trips and atlases that have been adopted electronically in the teaching of geography. In addition to the current research, the researchers propose similar study be conducted on another study stage.

Introduction

The current era is characterized by rapid changes and challenges. These changes include both scientific and educational progress, especially the development of the use of modern education technology based on the learning system in most cases, and the openness of the world represented by the rapid arrival of information, E-learning ", necessitated the need to keep pace with those rapid developments. So the educational institutions should pay attention to the development of the minds of the creative students to be able to cope with those changes and rapid developments in the field of soils, because these developments can not be reached except through the practice of educational institutions for their educational role and the rapid changes that are taking place in our modern world in the twenty-first century, which called on institutions of society, especially educational institutions to reconsider the plans and goals sought by to complete the process of teaching and learning through the programs as to get benefit from them. Moving from their teaching strategies based on the quantitative method to the qualitative method that looks for quality in all the workshops in education.

The use of modern strategies and teaching methods that contribute to changing the role of the student from the recipient to the positive participant, so that the product of the information, based on strategies and methods of modern teaching contributes to raise students and their attention to build creative figures and thinkers and self-seeking information.

These modern teaching strategies consist of a structured and flexible application plan and an art created by the teacher to convey the material to the students' minds and to provide the educational possibilities available in an optimal way to achieve the educational goals. Educational strategies are currently one of the important elements which educational institutions depend on changes in the teaching of topics in general and geographical topics in particular. Educational literature indicates that there is increasing interest in modern teaching strategies and methods, and the adoption of modern teaching strategies in teaching various subjects, as it has become one of the current objectives to teach and facilitate the subjects , they are effective tools in the educational process, the teacher can't be dispensed with, and without a teaching strategy , it can't achieve educational goals, but that the strategy determined by the teachers by relying on some scientific basis.

There are other factors leading to interaction between the teachers and their students, lying in the use of strategies that rely on the learning system

, and the selection of most appropriate strategies for the implementation of education, and f self-learning strategies and . by the time , the student sit to play with the computer as an electronic learning system , the learning process begins. The student chooses the position that suits him, the subject he wants to know, the speed of the presentation he wants and the responses that he thinks are suitable to the moment when the learning activity ends . The use of atlases is a living means of scientific documentation that provides theoretical information in a practical way to be an applied and realistic affirmation. It employs images and electronic methods in the lessons and makes them as means of explaining and analyzing. This is the realistic reading of the phenomenon that completes theoretical reading.
A means of illustration in the lesson, but more realistic than it, and enrich the books with the element of documentation l, which is the basic images and realistic maps of the phenomena and the environment around us, and support the theoretical side of the lesson

previous studies
A study (Abdel-Al, 2015) ,the role of cognitive journeys across the web . The study aims to investigate the impact of the Web Quest strategy (cognitive journeys), on teaching Geography to develop awareness in the 1st- secondary stage students towards some of the global environmental problems and their attitudes towards them. The researcher have used the semi-experiential (semi-empirical) approach of the same group with the pre and post-test. The sample was 30 females, the researcher has used Statistical means (Kiodr equation Richardson KR21 formula, T-test , the percentage gain rate, ETA square N2). The results have showed the effectiveness of cognitive trips in the development of the awareness of the students toward some global environmental problems and the development of the trend towards strategy.
Al-Juhani, 2012: The aim of the research was to investigate the effectiveness of the strategy of knowledge journeys through the web (Web Quest) in learning science to develop some of the skills of the operations of science in intermediate school students. The researcher as used the semi-experimental method with the experimental and control groups with the pre- and post-test. The sample consisted of (80) female students. The researcher has used ADATA (measuring prel and remote performance, test of science operations) and statistical methods (T- test for two independent samples. The

results have showed that there was a statistically significant difference between the average scores of the experimental group, the average score of the students in the control group in the post-experiment application to test the overall science operations, and the strategy of knowledge trips through the web is effective in developing science operations skills
The researcher did not find previous studies on the Atlases electronic geography. (Abdel-Al, 2015, 1-200).
The problem of the study: In the light of the extrapolation of the researchers from the way of their work in the teaching profession and their continuous follow-up of students during the period of application have noted that there is a large shortfall in the role of the student to learn Geography, which should be positive role for any active participant in the lesson. The low level of achievement of several things including: Lack of interest of some of the Geography teachers to employ modern teaching strategies, including built on learning system, as well as the weakness of some traditional teaching methods used in the teaching of geography by teachers that generate educational environment based on memorization and indoctrination only, as well as the views of some educators that the teacher is the only one who knows what should the student study , and therefore he is responsible for the transfer of knowledge, as well as the adoption of some teachers the manner of the lecture where they find it easy to prepare and transfer knowledge to students. For knowing reasons of weakness in the students of fourth stage in Geography , the two researchers will experience knowledge trips and geographies by employing them electronically in the teaching of subjects of geography to increase the level of achievement, and thus determine the problem of the current research in the question: Trips knowledge and geographic atlases electronically effectiveness in the achievement of geographical topics at the fourth –stage students/ literary branch.

The importance of study
The theoretical importance of the current study
First: Cognitive trips electronically
Types of picnics
1st. Short-Term Web Quest: The goal is often to train students to access, understand and retrieve information sources, usually limited to one subject and requires a simple mental completion and provide results of the journey knowledge in a simple form such as a list of URLs or a summary of a topic,

2nd : Long-Term Web Quest: It takes a period of time from one week to a month,, it require advanced operations, such as analysis, composition , and evaluation for each student will analyze, complete his / her knowledge with prior knowledge. Students can develop a variety of thinking skills such as comparison, classification, induction, reasoning, conclusion, error analysis, summary, analysis of views and others. In the form of oral presentations or in the form of research, or a working paper for presentation (Zahran and Nashwa, 2011: 240)

Components of electronic knowledge picnics

First: Introduction :The introduction of the initial information that sets the journey of electronic knowledge in the general context of the subject or lesson involved, such as the identification of the basic idea of the lesson or topic the student interests in, the main points of the lesson, and the objectives that the teacher seeks to achieve, Mainly to raise the interest and curiosity of students to do the tasks required with some desire , pleasure and the presentation of scientific material in the book

Task: The task, or what is sometimes referred to as the issue, is a specific description of what the students will complete at the end of the cognitive journey. This section describes the activities and questions that cover the different points of the lesson.

Third: Process: This section describes the steps that must be taken by students in finding out the task required of them to achieve the goals of the cognitive journey , and it may be important to identify these steps for students and described each in some detail and clearly, especially in the case of Long-term cognitive trips.

Fourth: Resources: This component comes in importance after the component of "mission", because the process of selection of sources of information is not only a list of sites related to the task, but must be high standards of accuracy and caution in the selection. At this stage, the teacher chooses links of information and other sources that are closely related to the task or the central questions that students are asked to find or research.

Fifth: Assessment: The purpose of this part is to measure the skills acquired by the students through the activities included in this electronic cognitive journey, it shows the criteria that will be evaluated by the work of students, as the existence of a special mechanism to assess the work of students and to ensure a high degree Of objectivity, and consistency.

6th /End of the journey: "It is the final stage of teaching in electronic cognitive trips, and provides students with an opportunity to know what they have accomplished and the importance of what they have done in a way

that encourages them to continue research, and allows the teacher to provide the appropriate notes and recommendations to develop the educational experience through the words they can learn better when talking about

Newspaper	*Numbers of articles before 9/11*	*Numbers of articles after 9/11*	*Increase percentage*
Guardian	817	2,043	250%
Independent	681	1,556	228%
Times	535	1,486	278%
Daily Mail	202	650	322%
Daily Express	139	305	219%

rial in the electronic cognitive journey. It includes information regarding the lesson plan and conclusions and student evaluation results. (Schweizer & Kossow, 2007).

Second: Electronic Geographical Atlases

Educational rules for the design of atlases Geographical: The atlas is a geographical reference used in the studies of Atalas objectives, but they differ in that geographical Atlases represent the spatial and temporal dimensions together. This study is an attempt to clarify the rules and the foundations for the representation of some of the technical problems , after data and geographical information will have been determined. These data are represented as symbols to identify the location of the event, linear symbols to show the direction of the moving phenomenon over time, then spatial symbols to show the extension over a previous period of time. Since geographical information is not all capable of cartographic drawing, it is necessary to provide atlases with text or photograph (PO, 2016, 33)

Educational skills in the selection of geographic atlases: It is suitable for the study of the various types and the skill of its presentation, it is intended to the performance of the teacher in preparing and dealing with the students, in which students begin to know their field, understanding and intended to read, analysis of the manifestations , interpretations and the conclusion of phenomena. It is intended to be used carefully, not to distort its features and it can be used in teaching as long as possible, directed and intended to be accurately placed so that it applies phenomena described them with those on the nature; teachers of social subjects are able to read symbols, analyze and present them to students quickly , accurately and proficiency, and measured the degree to which will be obtained by the teachers. (Mahmoud, Al-Qaoud and Al-Momeni, 2010: 65)

Third: Electronic Atlases:

Atlases are the best references where they contain the best collections of atlases they represent. Atlas in the traditional sense is a collection of carefully chosen images designed to achieve the purpose of its creation. It is

linked to one subject or a set of themes in a selected region At. (Slocum) gave a definition to " Atlas" , it is as an "atlas and binocular database available in a digital environment. The electronic Atlas enables its users to take advantage of the digital environment through Internet access, data exploration, mobile telephony and multimedia." Electronic Atalas is a new branch of cartography. There have been multiple labels that have become synonymous with electronic atlases: electronic atlases, electronic products, multimedia atlases, supermodels, virtual or phantom dialects, digital dialects, etc. Atlas ,at the end of the 1980s when the geography department of the University of Arkansas developed the electronic Atlas, is a collection of static atlases stored in the computer, accessed through a list, and then followed by other countries to develop various technologies and special systems, and they put their cartographic products on the Internet, as they tried to develop national latitude and national information systems in this way, including the applications of Atlas , the national electronic atlas has been developed by Canadian scientists on Macintosh computers using the program (Hyperoard) such as the simple Atlas produced by University of Laval. (Al-Omari, 2009, pp. 41-43).

Applied importance of the current study

1. the importance of education is as an important means of bringing about educational changes that need to be changed in the educational learning process.
2. Help educators to break the barrier of fear in the teachers of geography, when thinking about employing the electronic system.
3.The benefit of the teachers of geography in all stages of the study to see the daily teaching plans organized according to the objectives of modern education and theoretical aspects developed by the researchers on the basis of knowledge trips and geographies electronically.
4. Enabling students to interact with an electronic educational environment and really it helps them to understand the geographical events in the world.
5.The present study may be useful in planning and developing curricula and teaching methods in terms of the feasibility of implementing learning system.
6. The importance of geography and teaching, which helps students understand the geographical phenomena.
7.The importance of teaching the geography teachers in modern strategies and their diversity, and learning about steps in teaching geography.

Study Questions

1. Knowledge of the effectiveness of cognitive trips electronically in the achievement of geography material in the fourth stage students.
2. Knowledge of the effectiveness of atlases geographically electronically in the achievement of geography subjects on students of the literary class.
The limits of the study
a . Human and spatial boundaries: fourth - stage students in Baghdad governorate.
B . Time Limits: The academic year 2016/2017.
C. Determinants of the study: Teaching the first four chapters of the Arab World Geography.

The hypothesis of the study: There is no statistically significant difference at (0.05) among the average scores of the students of the three research groups. The first experimental group, which studies geography in electronic knowledge, and the second experimental group, which is taught electronically Atlas and the control group, Post-achievement test.
Definition of study terms
Electronic Knowledge trips
(Azmi, 2014) "Educational strategy aimed at integrating the learning and the Internet in education, which is basically centered around the student, where they are directed to the resources related to the subject of the lesson after the organization of resources, each student should collect facts and search for these facts and analysis and then create a new opinion or knowledge . " (Azmi, 2014: 396).
Atlases Electronic Geography
(Al-Taei, Al-Azzawi, 2013) "A term used for every map and atlas produced by factors that give electronic outputs and represented by exact figures and figures. These stages are capable of converting linear image features into electronic quantities and values. They can be stored and re-displayed at any time using the computer. (Al-Azzawi, 2013, p.20)
Achievement
(Abbadi, 2006) "The students acquire facts, concepts, generalizations and skills after studying a subject, unit or curriculum" (Abbadi, 2006: 11).
Procedural Definition: The extent to which fourth –stage students achieve educational objectives in Geography because they relate to take decisions related to their final achievement scores
(Abu Sarhan, 2000): "Study of the surface of the earth and its natural phenomena and the relationship between its effect and man." (Abu Sarhan, 2000: 28).

Procedural definition: A set of subjects such as rivers, seas, mountain ranges, agricultural areas and deserts, which the researchers teach within the subjects.

Study Methodology and Procedures: The experimental research approach was followed to suit the hypothesis of the current study.

The Study Society: The study consists of fourth –stage students who study in the governmental schools for boys belonging to the six general directorates of Baghdad (Rusafa I, II and III) and (Karkh I, II and III) for the academic year 2016-2017,(306) secondary and secondary school..

The sample of the study was randomly chosen by the Directorate of Education of Baghdad, Rusafa/ the first in the intermediate way. From this Directorate, it was randomly selected intermediate school. The two researchers have visited the school to find out the number of students. The number of students in the fourth stage was 94 students divided into three divisions. (B) The second experimental group and the control group (c) The number of students in the sample for the three groups (90) students after the exclusion of the students (4) for the safety of the experiment, because they have former experience . This may affect the achievement variable and thus the accuracy of the results. The researchers have excluded the students from the final results statistically, and Table (1) shows this.

Number of students in the experimental group and control before and after exclusion

The group	Section	Number of students before exclusion	Number of excluded students	number of students after exclusion
1st experimental group	B	30	1	30
1st experimental group	A	31	1	30
Control group	D	32	2	30
The total		94	4	90

Research Tool

Achievement Test: The researchers have prepared a multi-choice (40-item) multi-choice test. The researchers have followed several steps in the preparation of the post-achievement test

1.Preparation of the specification table (optional map): The researchers have prepared a table of specifications for the three levels of the knowledge field of the Bloom classification (knowledge, understanding, application). Table (2) shows this

The achievement results : The two researchers have prepared test of achievement ,(multi-test) consisting of 40 items , the two researchers have followed the steps to prepare this (test through table of sp Table (2

Test map (specification table) for achievement test scores and behavioral goals specifications. Table (2) shows that:

Chapters	Relative importance	Number of behavioural goals				Goals / level			Total
		Knowledge	Understanding	Application	Knowledge	Understanding	Application		100%
1st chapter	24	16	19	11	5	3	2		10
2nd chapter	15								6
3rd chapter	10	10	17	9	3	2	1		18
4th chapter	46	52	32	21	8	6	4		6
Total	100%	112	77	51	19	13	8		40

2. Validation of the tool: To ensure the validity of the paragraphs of the test, the paragraphs were presented to a group of experts in the field of teaching methods of social measurement and evaluation, and adopted the proportion of agreement (80%) acceptance of the paragraph, and all the paragraphs received the acceptance of experts without any modification.
The first sample was used to test the results of the test. The test was conducted on a sample of 130 students to determine the accuracy of the test instructions and the time taken for the test. The average time was about 36 minutes . The researchers have selected a second survey sample of (110) students. The high and low performance was adopted by 27% each. The difficulty of the paragraphs ranged from 0.49 to 0.50. The difficulty of the paragraphs between (0.49) and (0.70), the researchers kept all paragraphs of the non-deletion of the strength of the distinction ranged between (0.46) and (0.87), while the effectiveness of the wrong alternatives showed that the wrong alternatives to the test paragraphs attracted a number of students in the lower group than the students of the upper group.
Consistency of the instrument: consistency was verified by the formula of Alpha Cronbach, and its coefficient (86, 0) was a good consistency coefficient and therefore acceptable as measured by specialists in measurement and evaluation.
Statistical processing: For statistical data processing, statistical methods were used for statistical analysis using the statistical package for social sciences (SPSS)
Results
The zero hypothesis is that there is no statistically significant difference at (0.05) between the average scores of the students of the three research

groups. The first experimental group, which studies geography in electronic journeys, the second experimental group, which is taught atals electronically and the control group studying the same subject .

The results have showed that the average scores of the students in the study sample were for the first experimental group (45,47) and for the standard deviation (4,420) and for the experimental group (25, 46), standard deviation (3,881), control group (40, 33) and standard deviation (5,490), and table (3) shows this:

The arithmetical mean and the standard deviation of the scores of the students of the three research groups in the achievement test:

Table 3

The group	Sample size	Arithmetic Mean	Standard deviation
1st experimental group	30	47.45	4.420
2nd st experimental group	30	46.25	3,881
Control group	33.40	30	5.490

It is clear from Table (3) that the first experimental group that was exposed to the effect of the independent variable (cognitive trips electronically) came in first place, while the second experimental group came under the influence of the independent variable (geographic atlases electronically) and the control group came in third place.

Table 4

Results of the analysis of the single variance of the three research groups in the achievement test

Variance Source	Total of Sqs.	Freedom degree	Squares Mean	Calculated value (F)	Indication
Between groups	5952,169	2	3215,311	211,660	Function
Inside the groups	3297	87	19,976		
Total	8150,269	90			

Table (4) shows that the calculated Fahrenheit value reached (211,660), which is greater than the nominal value of the table. "

This indicates that there is a statistically significant difference between the average scores of students among the three research groups. To find out the difference, the researchers have used the tukey test for bilateral comparison Dimension of the mean scores of the three research groups. The

use of this statistical method is that the Tuki test gives better results if the samples are similar in number.

Table 5

Toky test for two dimensional comparisons

Comparison No.	Comparisons	Difference between two mean	Critical Value of q	Critical difference	Function
		2		H S D	0.05
1	1st experimental group and control group	14.050	3,36	2,467	
2	2nd experimental group and control group	12,850			Function
	1st experimental group and 2nd experimental group.3	1,20			Function

The first comparison: (the first experimental group and the control group): It was found that the average score of students of the first experimental group with which the cognitive journeys were used electronically reached (47,45) and that the average of the control group with which the usual method was used was 33,40. The TOKY test to determine the significance of the critical difference between the two averages shows that the difference D is statistically significant, because the difference between the mean is greater than q for the interest of the first experimental group.

The second comparison: (the second experimental group and the control group): It was found that the average score of students of the second experimental group with whom the geographic atlases were used was 46.25, and that the average grade of the students in the control group was (33,40). Using the TOKI test to determine the critical difference between the two, D was statistically significant, because the difference between the mean was greater than q for the interest of the second experimental group

The third comparison: (the first experimental group and the second experimental group): It was found that the average scores of the students of the first experimental group with which the cognitive journeys were used electronically reached (47,45). The average of the second experimental group with which the geographic atlases were used was 46, 25) Using the

Toki test to determine the critical difference between the two averages, the difference was statistically non-D, because the difference between the two averages is smaller than the value of q.
Discussion of the results of the study: It was found after the analysis of the results that the students of the two experimental groups have outperformed the students of the control group in the achievement test, knowledge trips and geographic geographies have contributed to raising the level of student achievement and achieved scientific achievement because they achieve the necessary scientific efficiency through excellence that is evident in the interest of the experimental groups in the two experimental groups. This superiority is due to the effectiveness of the fourth- stage students through their interest in the subjects , because the variety of teaching procedures included in the knowledge trips and geographic atlases electronically, led to their superiority on the usual way of teaching, and this diversity spent on routine procedures when viewing geographical topics , attracting their attention and encouraging them to communicate and follow-up to what has been delivered in the lesson.

The students must pay attention and focus on the teaching procedures because they are required to follow-up the reasons and conclusion. This actually urges them to find solutions to the questions posed to them to answer them easily and that the superiority of the students of the experimental groups studied geography is due to the possession of the two teaching methods of Positive educational goals and by giving students freedom of application and attention and concentration, which resulted an interaction between students within the classroom and their interaction with the teacher, either teaching the usual way by depending on the theoretical side.

Recommendations of the study and proposals: In the light of the findings, the two researchers recommend the adoption of trip knowledge and Atlases geographically electronically in the teaching of geography, to complete the current study, the researchers suggest a similar study of the current study on other variables such as acquisition or development with the variables of thinking and intelligence.

References

- Abu Sarhan, Attiya Odeh (2000): Studies in Methods of Teaching Social Education, Dar Al-Wadah, Amman, Jordan.
- Basso, Mujib (2016): maps and maps, number (15406), Al-Fida Magazine, (published research) Hama, Syria..
- Zahran, Hanaa, and Nashwei Shehata (2011): The Effectiveness of a Knowledge Journey Through the Internet in Achieving Third Year Students in the Faculty of Education for Natural Systems Geography and Development of Their Trends Towards it, International Journal of Educational Research, p. 30, Abu Dhabi, UAE.
- Al-Tai, Ayad Ashour Hamza, Al-Azzawi, Thaer Mazhar Fahmi (2013): Modern Technologies in Geography, 1, Dar Al-Janan Publishing and Distribution, Amman Jordan.
- Abadi, Raed Khalil (2006): School Tests, Arab Community Library, Amman.
- Abdel-Al, Reham Refaat Mohamed (2015): The role of knowledge trips through the web during the teaching of geography in the development of awareness of students of the first grade secondary to some of the global environmental problems and trends towards them, (Jordan Journal of Educational Sciences), Jordan.
- Azmi, Nabil Gad (2014): Interactive Learning Environments, 1, Arab Thought House, Cairo, Egypt.
- Al-Omari, Mohamed Awad (2009): E-learning concepts, characteristics and methods of design and publishing, and developments and trends of modern, Journal of Arts and Humanities, Maj. (17) p (1).
- Mahmoud, Sabah, Al-Qaoud, Ibrahim and Al-Momani, Muhammad (2010): Methods of teaching geography electronically, Dar Al-Amal, Irbid, Jordan
- Cohen,J.(1988); Statistical power analysis for the behavioral sciences. Difficulties to Think Met cognitively, Australian Journal of Differentiation, Gifted Child day, 30(1), .
- Schweizer, H & Kossow, B.(2007) : Webquests: Tools for Differentiation, Gifted Child Today, Vol. 30, No.1. 2.