تصميم برنامج ذكي لقياس مستوى الطالب

بالمرحلة المتوسطة بدولة الكويت

Designing Intelligence Program for assessing the level of the Intermediate stage student in Kuwait

By

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Authorization

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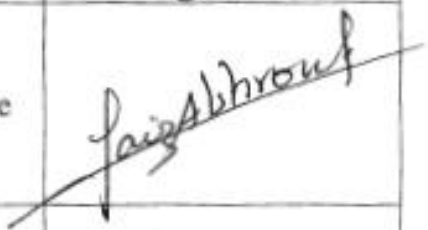
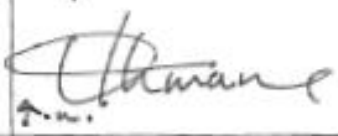
Dr. fayez Al sharof	Head of committee	
Dr. Akram Al Mashaykhi	Member and supervisor	
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Dedications

To Dr. Akram Al Mashaykhi for his support and encouragement.

To my father and mother, To my wife, my family for their love and support.

And to everyone who supported me during my study .

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Abstract

Intelligent Agent Design for Student Level Assessment Intermediate Stage in Kuwait

Beaijan Fayed Al Rashidi

That the use of the computer its applications multiple and diverse schools of education has become a necessity imposed by age, can not be dispensed with in any way just as it has the ability to assist those involved in school and those who made it and others, it is to the side that represents an effective way to improve the performance of student education.

The present study aims to design intelligent software and indicative proposal to try to improve student performance in the stage of the most important stages of education namely the intermediate stage in the substance of Computer Science. The program was applied to students of middle school education in the public schools in the age group of (12-16) years.
The researcher in the study, follow the experimental method, and constructivist approach, where they were building a test to measure the level of middle school students in Kuwait.
The most important results:
1 no effective strategy for learning cycle in the achievement test to measure the level of middle school students in Kuwait.
2 There were statistically significant differences at the level of significance ($\alpha = 0.05$) between the average grades of the experimental group, the control group and degrees in Computer test for the experimental group.
3 The results of this study also indicated that the averages for the top grades of students in the experimental and control groups in the post-test may have been in favor of the experimental group at all levels.

الملخص

تصميم برنامج ذكي لقياس مستوى الطالب بالمرحلة المتوسطة بدولة الكويت

الباحث : بعيجان فايد الرشيدي

أن استخدام الحاسب الآلي بتطبيقاته المتعددة والمتنوعة في المدارس التعليمية أصبح ضرورة ملحة يفرضها العصر ، لا يمكن الاستغناء عنها بأي حال من الأحوال فكما أن له القدرة على مساعدة المعنيين بالمدرسة والقائمين عليها وغيرهم ، فهو إلى جانب ذلك يمثل وسيلة فعالة لتحسين أداء الطالب التعليمي .

وتسعى الدراسة الحالية إلى تصميم برنامج ذكي وإرشادي مقترح لمحاولة تحسين أداء الطالب في مرحلة من أهم مراحل التعليم ألا وهى المرحلة المتوسطة في مادة علوم الحاسب الآلي .

تم تطبيق البرنامج على طلاب المرحلة المتوسطة بالتعليم في المدارس الحكومية في المرحلة العمرية من (12 – 16) سنة .

وقد اتبع الباحث في دراسته المنهج التجريبي ، والمنهج البنائي ، حيث تم بناء اختبار لقياس مستوى الطلاب بالمرحلة المتوسطة بدولة الكويت .

وكانت أهم النتائج :

يوجد فاعلية إستراتيجية لدورة التعلم في الاختبار التحصيلي لقياس مستوى الطالب بالمرحلة المتوسطة بدولة الكويت .

توجد فروق ذات دلالة إحصائية عند مستوى الدلالة ($\alpha = 0.05$) بين متوسط درجات تلاميذ المجموعة التجريبية ، ودرجات المجموعة الضابطة في اختبار الحاسب الآلي لصالح المجموعة التجريبية.

تشير نتائج هذه الدراسة أيضاً إلى أن المتوسطات الحسابية الأعلى بالنسبة لدرجات الطلاب في المجموعتين التجريبية والضابطة في الاختبار البعدي قد كانت لصالح المجموعة التجريبية في كل المستويات .

Chapter 1
Introduction

1-1 Overview

Resulted in the invention of the computer its applications broad and multi rise to a renaissance of major global influenced character digital all the discoveries and studies of different n and which were not to look like this growing in the absence of this discovery is strange, which is not greatly facilitated in the direction of various sciences and is applied later.

In the light of the world of accelerated growth, renewed evolution and development, has become a must for each of a profession that assesses his career and measured as required and the pace of life is fast, and the rhythm of the times rowdy, so as not to find himself suddenly in the last knees and bottom of the list, here it is sought by all States in various organizations and its various institutions and is dedicated to reach the objectives of observed and assessed and as soon as possible ways and the most likely, a so consider an eye to what they offer and what the and progress n and interrelated to what can be gaining than those of the other who won the lead in the fields of development and renaissance and sophistication.

The computer such as including attributes of the potential tool municipal help irreplaceable in various fields and at various levels, bringing a hand to help, and a loyal friend tender offers unlimited high confidence and remarkable.

The play of Education an important role in the construction of the individual and refine his abilities to fight the works of life and community-building, thanks to the rehabilitation and training and guidance through the educational process, and ceremony Islamic educational thought issues of educational, including educational technology and modern technologies, and in recent decades occurred rapid development in educational methods and how to employ them, It is this means the computer, and this led to the use of computers in teaching for all levels of education from kindergarten and the end of university education. [1]

So it has received education institutions in various different countries the opportunity to opportunity given confidence again to reshape itself while you may crumbled by negative factors all affected in the process of its bid, such as lack of efficiency and adequacy of manual systems of old, which is now unable to do its duty in front of a large amount and the amount of information flowing in various spheres of life.

Going back to the priorities of the emergence of computers in education, it can be argued that the computer has emerged first appeared in educational institutions, large and specifically in American universities, and only use it while that on some things administrative, financial , and then he used after in research projects, to reach beyond to some subjects , and that was in the sixties of the twentieth century, followed by entering the progressive education , so the view of many educators then that the invention of the computer was and will have a significant impact on the educational systems in the world ,

and sees Beerigeter 2003 at this level that the computer and the way educational strong and have a great future in improving the educational process, but the spread of its use in education has revolutionized large . [2]

The whole interested in education later on that the introduction of computer education has been through three important areas : [3]

1. The use of computers as teaching material .
2. Use the computer as an educational tool .
3. The use of computers in the administrative affairs of educational institutions.

The computers in the field of measuring the level of the student, as in various other areas of great importance, as there is no difference in being done and assistant intelligent aim for him all institutions and departments at different to the level of the best and most efficient enjoy high productivity and the level of student nicely and competent, and when done well any other educational determine student's level and adapt curricula and serves aspirations then been able to achieve the aspirations of the shorter and faster.

1-2 Statement of Problem

Clear to us that the use of computers and its applications multiple and diverse schools of education has become an urgent necessity imposed by age, Cannot be dispensed with in any way just as it has the ability to help the concerned school and those who made it and others, it is along this represents an effective way to improve the performance of the student educational.

The problem with the current study in the design of intelligent software and an indicative proposal to try to improve student performance in stage one of the most important stages of education namely the intermediate stage in Computer Science material.

The problem can be formulated the current study, the following questions:

What is The intelligent program proposed by the Computer to measure the level of a student in the intermediate stage in the substance of Computer Science?

What is the effectiveness of the program proposed by the computer to determine the student's level of knowledge and therefore work to develop and improve the level and sophistication of this?

1-3 Related Work

This section present some of studies which are related to the objective of this thesis.

1-3-1 Design and implementation of an intelligent virtual environment for improving speaking and listening skills [4]

In this paper, we present an intelligent architecture, called intelligent virtual environment for language learning, with embedded pedagogical agents for improving listening and speaking skills of non-native English language learners. The proposed architecture integrates virtual environments into the Intelligent Computer-Assisted Language Learning. This architecture supports visual, auditory, and haptic channels of interaction.

It allows pedagogical ideas about language skills to be implemented and validated with a minimum design time. Moreover, we design a computational model to evaluate learner's proficiency level, and an automatic adaptation mechanism which adjusts to the learner's learning curve. We have implemented two scenarios based on the proposed architecture to teach learners how to communicate in public places such as airports and TV stores. Inputs to this system include learner's speech and hand motion, and outputs include graphical scenes, force feedback, and speech by a few embodied agents. Throughout interactions, agents discover the proficiency level of the learner and customize the level of communication complexity accordingly. The system is tested on 10 subjects. Experimental results show 14% increase in the number of proper replies, 3% decrease in grammatical errors, 16% decrease in pronunciation duration, and 11% increase in learners' proficiency level within three trials.

1-3-2 Computer-Aided Self Assessment: The Intelligent Answer?[5]

As an antecedent of the Training Agency's Artificial Intelligent Applications to Learning programme, a computer-assisted self assessment system was developed to explore the use of artificial intelligence techniques in the area of self assessment. There have been four phases involved in this work. First, a pilot project prototype was developed using three occupational areas: retail, food processing and manufacturing. This phase allowed the Training Agency [though the project team] to evaluate the use of expert systems technology for self assessment. During the second phase of the project the knowledge base was extended to incorporate clerical, administration and craft engineering. In phase three a discrete system was developed for clerical and business administration,

with the inclusion of existing qualifications in these areas. The final version, at present being piloted in Employment Training [ET], has been titled the AsSyst system. This system has four major components: a user preference section; a job allocation procedure [which can be altered by the user]; based on job choice, a user competence questioning facility; and finally a printout containing the user training protocol.

1-3-3 Cognitive-operative model of intelligent learning systems behavior [6]

In this paper behavior during the teaching–learning process is modeled by means of a fuzzy cognitive map. The elements used to model such behavior are part of a generic didactic model, which emphasizes the use of cognitive and operative strategies as part of the student–tutor interaction. Examples of possible initial scenarios for the teaching–learning process are developed, along with the results provided by the model.

1-3-4 LEARNING BY TEACHING: A NEW AGENT PARADIGM FOR EDUCATIONAL SOFTWARE [7]

This paper discusses Betty's Brain, a teachable agent in the domain of river ecosystems that combines learning by teaching with self-regulation mentoring to promote deep learning and understanding. Two studies demonstrate the effectiveness of this system. The first study focused on components that define student-teacher interactions in the learning by teaching task. The second study examined the value of adding meta-cognitive strategies that governed Betty's behavior and self-regulation hints provided by a mentor agent.

The study compared three versions: a system where the student was tutored by a pedagogical agent, a learning by teaching system, where students taught a baseline version of Betty, and received tutoring help from the mentor, and a learning by teaching system,

where Betty was enhanced to include self-regulation strategies, and the mentor provided help on domain material on how to become better learners and better teachers. Results indicate that the addition of the self-regulated Betty and the self-regulation mentor better prepared students to learn new concepts later, even when they no longer had access to the SRL environment.

1-3-5 Getting personal with computers: How to design personalities for agents [8]

Recent research indicates that people respond socially to computers and perceive them as having personalities. Software agents are artifacts that particularly embody those qualities most likely to elicit social responses: fulfilling a social role, using language, and exhibiting contingent behavior. People's disposition to respond socially can be so strong that they may perceive software agents as having a personality, even when none was intended. The following is a discussion about intentionally designing personalities for social agents. To design personalities, it is necessary to consider the nature of personality and its role in interactions between people and artifacts. In addition, a case study of designing a social software agent is presented. The conclusions from this experience are summarized as guidelines for future agent developers.

1-3-6 Agent Technologies Designed to Facilitate Interactive Knowledge Construction [9]

During the last decade, interdisciplinary researchers have developed technologies with animated pedagogical agents that interact with the student in language and other communication channels [such as facial expressions and gestures].

These pedagogical agents model good learning strategies and coach the students in actively constructing knowledge during learning. This article describes computer technologies that have been developed during the last decade with tutors that attempt to facilitate deep comprehension [e.g., causal explanations, plans, logical justifications], reasoning in natural language, and inquiry [i.e., question asking, question answering, hypothesis testing]. These tutors target high school and college students who learn about topics in science and technology. The primary example is AutoTutor, a system on the Internet that helps students compose answers to deep-reasoning questions and solutions to problems by holding a conversation. AutoTutor's dialogue moves include *feedback* [positive, neutral, and negative], *pumps* for more information ["Tell me more."], *hints*, *prompts* to fill in missing words, *summaries*, *corrections* of student misconceptions, and *answers* to student questions. Other learning technologies with agents include the Human Use Regulatory Affairs Advisor [HURAA]; Source, Evidence, Explanation, and Knowledge [SEEK] Web Tutor; Interactive Strategy Trainer for Active Reading and Thinking [iSTART]; Instruction with Deep-level Reasoning questions In Vicarious Environments [iDRIVE]; and Acquiring Research Investigative and Evaluative Skills [ARIES]. These systems have been tested on their effectiveness in facilitating knowledge construction.

They also have uncovered insights on the prospects of designing agents to effectively communicate in language and discourse.

1-3-7 Beyond 'doing time': investigating the concept of student engagement with feedback [10]

Feedback on students' assignments may be comprehensive and well-constructed as a result of careful thought from tutors trying to identify and address students' needs. However, feedback's utility ultimately depends on the way students engage with it.

'Doing time' by complying with a norm of collecting, but then only skim-reading, feedback is a long way from the 'mindful' engagement associated with reflection, interpretation, deepening understanding and changes in later behavior.

This article argues that the literature's traditional focus on experimental studies of feedback *attributes* [whilst ignoring students' *engagement*] is misplaced, particularly given the methodological problems and inconsistent findings associated with these studies. These limitations suggest the need for an alternative line of enquiry.

In this article, we develop a conceptual framework intended to illuminate the process of student engagement with feedback. We further propose a research agenda which can convey the variety of student experiences and generate analytic insights about students' evolving engagement as a result of multiple feedback encounters in an educational setting. We suggest that this research agenda can lead to policies and practices to enhance student engagement with feedback, which may build students' sense of responsibility and ownership for their learning.

1-3-8 Decision making soft computing agents [11]

The paper describes a soft computing agent approach to intelligent control of remote learning. It presents a special type of decision making soft computing agent applied to the selection of appropriate groups for definition of individual remote learning purposes. Soft computing agents are used to perform two tasks: optimal partitioning of distributed data bases in accordance with a grade of ability, and coordination in distributed environment for remote group definition.

The first task is realized via two-hierarchical fuzzy system for optimization of assessment parameters. The second is achieved by means of mobile intelligent agents for transmission, coordination, activation, and receiving decisions from/to remote learning nodes. As a final decision the node soliciting optimal group choice obtains information for group distributions over the whole system. This approach is applied in some cases to disabled people suffering from dyslexia. Dyslexia is defined as a learning disability by four psychologically obtained factors that present the grade of learning deficiency. They are preliminary provided for better understanding and formalization of remote learning process applied to disable people.

1-3-9 [Re]designing literacy teacher education: a call for change [12]

The article features a graduate literacy teacher education course that compelled students to think in terms of design and multimodality. In an effort to innovate our own literacy teacher education work, we came together to devise a course that encouraged students to adopt a design lens to their thinking, planning, and assessing of literacy learning. We saw this qualitative case study as a way to understand the interrelationships of learning processes,

principles of design and multimodal texts, and how these might inform pedagogy. Building on years of work in the areas of multimodality and multi literacies, we observed how eight teachers with varying degrees of comfort with multimodality moved into a design-oriented approach to literacy education. The article presents our research on design-oriented teacher education work, but the findings illuminate how the adoption and inhabiting of different mindsets and met language can make a difference.

1-3-10 An Intelligent Marking Assistant: An Application of Artificial Intelligence in Teaching [13]

We are entering the second computer revolution — described by many as "THE REVOLUTION". The Japanese have committed themselves to a programme to develop a Fifth Generation of computers — machines that can understand natural language, diagnose problems, and discover solutions. What are the implications for higher education?

This paper argues that the most interesting applications of this new technology are in producing "intelligent assistants" or "powerful tools" in the teaching/learning process. It describes in some detail a particular "Expert System" being used in this role — assisting academic staff with the evaluation of student work.

1-3-11 Self-Regulated Learning in Learning Environments With Pedagogical Agents That Interact in Natural Language [14]

This article discusses the occurrence and measurement of self-regulated learning [SRL] both in human tutoring and in computer tutors with agents that hold conversations with students in natural language and help them learn at deeper levels. One challenge in building these computer tutors is to accommodate,

encourage, and scaffold SRL because these skills are not adequately developed for most students. Automated measures of SRL are needed to track progress in meeting this challenge. A direct approach is to train students on fundamentals of metacognition and SRL, which is the approach taken by iSTART, MetaTutor, and other agent environments. An indirect approach to promoting SRL, taken by Auto Tutor, is to track the student's knowledge and SRL based on the student's language and to respond intelligently with discourse moves to promote SRL. This fine-grained adaptively considers the student's cognitive states, the discourse interaction, and the student's emotional states in a recent Auto Tutor version.

1-3-12 Teaching Information Literacy to Generation [15]

Whether they are called the Nintendo Generation, Millennials, or Generation, contemporary 17- to 19-year-olds bring unique learning style preferences and worldviews with them when they come to libraries' information literacy classes. Prominent among their preferences are visual and kinesthetic learning styles. They have incredibly positive views of technologies' potentialities and their own abilities with technologies. Like all students, they learn more effectively when taught in accordance with their learning style preferences and when their worldviews are acknowledged. Changing teaching methods and materials for an information literacy course at California State University, Hayward, to accommodate better Generation learners correlated with improvements in students' attitudes and performances.

1-3-13 An exploratory study on how children interact with pedagogic conversational agents [16]

A pedagogic conversational agent [PCA] can be defined as a computer system that interacts with the student in natural language assuming the role of the instructor, a student or a companion.

It can have a personality and can generate different sentences according to the agent or the student mood. Empathy with the students' feelings seems to increase their motivation to study. However, the influence of the agent personality and role as well as the students' opinion is still unclear. Therefore, in this article, it is explored with the help of a field experiment, for the first time, how these factors can affect the interaction of children with PCAs, and their opinions according to an anonymous and voluntary opinion questionnaire and some personal interviews.

1-4 Contribution of the Proposed Work :

Despite the abundance of studies , which means research in the use of computers in the areas of education and various educational , whether in the field of educational material independently or as a means learning connected to various activities and other knowledge , but that is another aspect important areas of its uses in the fields of education did not receive such What given to those areas above, and specifically with regard to its use in measuring the level of the student , especially in the substance of Computer Science, scarcity of research and studies in this area phenomenon noticeable despite its importance , which is hardly obvious to one and can display the importance of the study in the following points :

1 - The study provides intelligent software by using the computer to determine the student's level of knowledge in the middle stage.
2 - may help teachers of computer science. Teachers and all subjects through the use of this program is to increase the effectiveness of learning in all subjects.
3 - it is possible to benefit from the curriculum designers to computer science material.
4 - may open new horizons for researchers in the field of employment of computers in the teaching of computer science.

5 - it is possible that the benefit of teachers in the development of their information on the development of the stand at the level of the students and work to develop and improve their performance in computer science.

1-5 Methodology modules and operational structure of the proposed system

1-5-1 program :

Contains educational unit designed in a coherent and included a set of goals and experiences, activities and means and methods of teaching and assessment varied to determine the level of knowledge for students of intermediate material in Computer Science in order to improve the performance and sophistication level of the student.

1.5.2 the study hypotheses :

- There are statistically significant differences at the level of student performance intermediate stage in the Computer Science material before and after the application of the proposed intelligent program for the benefit of its application .

1-5-3 Tools of the study :

- A modern computer .

- Large screen display .

- The proposed Smart program .

1-5-4 The study sample :

The program will apply to intermediate students education in public schools in the age group of [12 - 16] years.
Terms of sampling :
- Intermediate students [male - female] in the Sunni period of [12 - 16] years.
- The student must be free of defects and disabilities phenomenon.

1-5-5 Steps to the program :
- Check out the references and previous studies and all that has to do with the subject of study to configure the background and extensive reference on the subject.
- Analysis of educational content to be the development and improvement in the substance of Computer Science .
- Building an intelligent program using the computer to its objectives, content and educational activities and associated materials and equipment to teach the program and methods of the calendar.
- Preparation of study tools [test] to see the impact of intelligent software to determine the level of the student in the educational stage medium in Kuwait , and ensure the veracity of the test submitting it to a group of experts and arbitrators ,
and the application of the program on the same exploratory composed of 30 students to ensure the internal consistency by the relationship between the dimension and the whole , and the stability of the test .

Chapter II
Literature Review

2-1 Introduction:

Recent decades have witnessed development is unparalleled in various spheres of life, and it was natural to be influenced by the field of education this development, and we can see some of the features of this development are represented in the succession of the emergence of many learning theories such as the theory of police, and the school of cognitive spatial and cognitive structural and cognitive social, and we can to see it also in the recruitment of a systems approach to education, this recruitment which led to the evolution of the concept of educational technology, is no longer confined to the tools and equipment that are used in the education process, but it came to refer to a set of inputs and processes aimed at the design of learning resources, operations and development to come out in the form of systems of education, and in light of this development is no longer acceptable in any way be subject teaching-learning process of floundering and random improvisation and trial and error, it became necessary to be planned and be planning subject to the supported models, from here become instructional design room as president of the areas of educational technology, and educational programs have become an essential part of all this is not the disintegration of the concept.

The Computer a product of scientific and technical progress of contemporary, is also at the same time one of the pillars of leading this progress

making him the recent focus of educators and those interested in the educational process, has focused on educational systems computerized and called for use either in teaching or school administration ,

and has been shown to most computer users practical experience in many of the developed countries that education computer if used in the right place at the right time can achieve excellent results in the classroom. [17]

2-2 Educational programs:

Researcher were able to get several definitions for the program in general or the educational program and these definitions in general reported a pedagogical English dictionaries as: curriculum or combination of courses in the areas of private study. [18]

The definitions of the tutorial mismatch definition ALLAkANY where defined as "a set of educational materials, may be in the form of curriculum or set of writings identify pupils accompanied by educational devices or a variety of activities, and determine for this program is usually a period of time, has taught learner part of this program within the school and the other part outside the school through home study. [19]

And known mystic 2002 as a regular array of activities and projects or services directed toward achieving specific goals [20], while Shehata 2003 Faarafha as a set of activities organized and correlated with specific objectives in accordance with the list or project plan in order to develop the skills,

or includes a series of courses linked to the aim of general or director final [21], has been known to Kishku as a set of experiences that are designed for the purpose of education and training in a coherent, which consists of a set of modules and each module on basic elements: top scorer, content, teaching methods, activities, calendar. [22]

Through previous definitions researcher finds that the educational programs is: a set of experiences, knowledge and concepts that are designed in the form of structured away from the indiscriminate and designed to measure the level of education or training or behavior modification or development skills, or training patterns of thinking, and formulated the desired results in the form of specific and clear objectives, and objectives are achieved through the use of a range of activities, methods and strategies and teaching aids, and must be the program of formative assessment and final.

2-3 Computer definition:

Knows Larry Long 2005 Computer it is electronic calculator capable of storing huge amounts of data processed and run through certain programs and then retrieve it in short period of time.

And see Almnibra 2003 "Computer is the special relationship to the world of today and tomorrow, and whether we like it or not love him, and whether we need him or not we need it has become a reality in the exercise rights of his career and scientific even become closely related to most of the areas of work of private and public production methods different." [23]

And knows Charles 2006 "Computer as an electronic device [not mind electronically] has the ability to receive data [input] and stored internally and processed [which perform calculations and comparisons logical them] in a way self by a program of instructions to get the desired results [output]. [24]

Has been known Mousa [2005] Computer as " electronic machine can be programmed so that the data processing , storage and retrieval and perform mathematical and logical operations against it."[25]

He knew the students of 1994 Computer is " an electronic device capable of receiving data storage and retrieval and automatically perform calculations and logical it is called these processes [data processing] and are processing operations in order to draw conclusions by following a detailed set of commands and instructions written in a special called the program " . [26]

Through it clear to the researcher that the computer is the device that receives and processes the data and then remove it with a new one , and use it to help achieve better scorer with saving money , time and effort .

2-4 System Computer Assisted Instruction:

Inception:

The emergence of Computer Assisted Instruction at the hands of all of Atkinson, Wilson, and subs, which is a program in the areas of education all, from which to provide the information and stored, allowing opportunities for the learner because discovers his own solutions to the issue of the liquid,

or communicate As a result of the findings, in spite of the proliferation of these programs are widely dispersed in the first place, but that the costs of preparation, and overlooked element of human interaction between the teacher and the learner were the cause of underestimated as a method of individualized instruction in the Arab environment.

The computer itself is an electronic device is characterized by attributes such as: precision, and perfection, and speed of delivery, and the multiplicity of potential, ease of use and low operating costs, and performs operations all assigned by the rights, The computer does not act on its own, but the only jobs that portrayed him When you put the program in advance, it is, however, the human machine. [27]

Studies indicate that the prevalence of computers effectively in school education was at the beginning of 1977 as a result of the evolution of computer e-mini or micro computer, and the accompanying decline continuously in cost prices, and the continued improvements in the properties of these devices, which entered into most of the schools in the states advanced, and in many countries of the developing world and has raised the introduction of computers in the school interesting educators, and practitioners interested in the affairs of education, has become now in use in many countries as an educational tool, and that it is not machine like normal machines, audio-visual, which did not happen a great revolution When combined in pedagogical methods, has resulted in its use to re-examine ways of indoctrination in the knowledge gained, the introduction of the computer within the means of indoctrination forced to determine scorer behavioral desired found when the learner,

and a careful analysis of the content of the subject and choose the methods that should be adopted as part of the process of indoctrination, and so on The adoption of computers in the education process led to the construction of detailed material subjects, becomes very education is not as much as possible of knowledge, but to find an element of thrill in the process of the transfer of knowledge to the learner, and increasingly so effective learner, overpowering the science in an atmosphere characterized by interaction and focus individuality and activity. [28]

There are various areas of computer use in the educational process can be used as an educational goal, or tool, or a contributing factor in the educational process, or departments, and what matters in this area is a computer-aided education. [29]

2-5 Computer Assisted Instruction CAI

Computer is not just a machine or tool, as some believe, it is an integrated system that includes a set of interrelated elements mutually, and integrated functionally to achieve the objectives, and represent devices and equipment Hardware that make up the computer one of these items, and software that is used in these devices second element, while a the human element Representative relationship between the machine and the human element III, a computer, on this basis is a media communication that provides for a person the opportunity to interact with the potential of the machine from receiving and storing information and to obtain accurate results super fast, and make decisions. [30]

2-6 Patterns for various educational use of computers in educational programs:

There are some educational patterns relating to the use of computers in education, including:

2-6-1 Way of Tutorial Mode and aims to learn through a program designed in the past:

In this type of use of the software process teaching any program teaches actually an idea or theme is, and the way prevailing in this type of use is present the idea and explained then revenue some examples, and sometimes citing examples of the opposite, and different programs on this subject greatly Some good an actor is based on the interaction and dialogue and uses drawing, colors, sounds and movements effectively and includes different ways to teach the same subject, so that each student finds fit in. From what teaching methods and some lousy no different from the way the book or the way the conservation and indoctrination. [31]

It is intended to education with the help of a computer, the computer can provide tutorials single to students directly and here occurs the interaction between these students [individually] and educational programs offered by the computer, and can be classified these programs into many varieties, including exercise and practice [Drill and Practice] assumed this type of program educational concept or al-Qaida or the way has been teaching for the learner and educational program that offers the learner a series of examples in order to increase his proficiency in the use of that skill,

the key is continued enhancement for each correct answer and the majority of these programs are either exercises in mathematics or training on the translation of a foreign language or exercises for language development and the like, and there are training programs help learners to build sentences. [32]

In addition to this, the programs of exercise and practice gives us a lot of questions varied in different shapes, give the computer to the learner the opportunity to do several attempts before they give him the correct answer contains all the software on different levels of difficulty give the learner feedback, both positive or negative, in addition to the reinforcement when Each correct answer. [33]

2-6-2 Method of Drill & Practice Mode:

It aims to learn by giving an opportunity for learners of training to master the skills previously taught in this kind of use of a number of drills or exercises or questions on a particular topic prior to consideration by the way, and the student work is enter appropriate answer where the computer to promote the correct answer correct or wrong answer to any goal in this type of use is drafting skills or information and training on the application quickly and accurately.[34]

It features a computer in this topic in its ability superior to produce a lot of exercise and the various issues and appropriate to a certain level, also features the traditional way any way the solution paper and pencil features many of them, for example, immediate feedback, because the computer shut off when the mistake has been discussed about this error,

The drills and exercises by the computer more interesting than the traditional method monotonous. [35]

2-6-3 Method of [Simulation] [36]

and aims to provide models useful in the process of building a realistic simulation of the model during training operations are difficult to perform in real situations.

And the need arises to this type of software is difficult when the embodiment of a particular event in fact due to the following:

- Financial cost: such conduct experiments in space.
- The length of time: like watching the growth process in the plant.
- After the place: such as how to perform Umrah.
- After Time and place: such as the correct way to perform Hajj and Umrah.
- And the danger of physical harm: such as chemical testing or flight tests.

As long as the learner is found in [Simulation Programs] a position similar to the faces of the positions in real life as they provide the learner training without real exposure to hazards or heavy financial burdens that may be exposed to the trainee if carried out this training on the ground.

And dealing with Simulation Programs topics related to the problems of administrative commercial and laboratory experiments in the natural sciences and in other cases, the learner is handling mathematical problems with Note impact of changing some of the variables n is the simulation programs related to the prediction of weather good examples of this type of program. [37]

There are different types of simulation software, which does not guarantee any specific targets and stop identifying these goals on the teacher or the learner himself and some of them does not provide students with any special instructions, and the computer to leave determine these instructions to the teacher himself or the pupil himself to discover the extent of the effect happening as a result of changing some of the variables This type of simulation programs can be used in different ways in order to fit the needs of different educational situations. [38]

2-6-4 Educational Games :

Play as the specialists say in child psychology tool normal task used by the child to understand the world and confront it and use the computer to play the urge to acquire the skills of problem-solving and decision-making and prolongs the child's abilities to pay attention and encourages the imagination, dealing with these programs a lot of topics, but they incorporate education in the form of games imaginary help students to compete to earn the information , and the students in order to win that solve mathematical problems , for example , and formulate the vocabulary and identify points on the network coordinates and read the instructions , interpret and analyze issues logical , and we find that the teaching methods by computer is either education tutor or method of training and exercise , and educational games and simulations may fall under one of these two methods . [39]

The educational programs are in the form of games with motivation strong and special exercises that you need to return to learn n and can be applied to educational games in the field of management training where participants form management teams are doing by making consensus regarding cooperation, and the winning team is the one who gets the highest score on the benefits cooperation. [40]

2-6-5 Educational Tutorial Program [41]:

The tutorial will provide information in small units and follows each unit specific questions about that unit and then the computer analysis of learner response and counterbalanced answer that might put the author of the tutorial within the computer, and the light that takes the learner feedback, and the teacher is the creator, who is programmed educational program so that it contains branches of other educational programs more difficult or less difficult than that educational program tailored to the needs and abilities of individual learners, and tutorial here takes the place of the teacher happens every interaction between the learner and the computer.

It features a computer in education great ability in terms of speed, accuracy and control in the provision of Article [content] educational, as well as help in the operations of continuous assessment and correct responses learner aphid and guidance and appropriate treatment for the mistakes of the learner, which extends the learner the feedback immediate and effective, and that would provide learning appropriate to the nature of the learner as an individual has a level of private interests and speed of making the computer a good way of self-learning.

2-6-6 Problem Solving Program and other programs offered by computer: [42]

There are two types of these programs:

Type I: relation to written learner himself, and the other about what is written by other people in order to help the learner to solve problems, and in the first type is the student identify the problem in a logical manner, and then subsequently left the program on the computer to solve that problem n and function of the computer Here are the calculations and processors sufficient to provide us with the answer, to this problem, while the other type of this program, the computer of this program, the computer doing calculations while the function pupil here to address one or more of the variables in the question of calculations related triangles, the computer can helps the student in providing factors and the pupil only to reach a solution to the problem.

Researcher finds addition to the above applications of computer education it is possible to use this device to design programs to measure the level of a student in the early stages various Sunni and in different subjects so that the teacher assess the status of the student and then upgrading the student and scientific knowledge, also can use the computer work a special table for the use of rooms school, and different instructional with students in education, as well as the computer can make copies of what he needs pupils of booklets and brochures, drawings, illustrations and gas and exams when need be, and can computer was working budget and record expenses and recording needs of teachers of materials and equipment and the remainder of the funds at the end of each financial year.

2-7 The justification for the use of computers in education:

I've helped all of the low price of computers compared inspiring and very useful, easy handling initial them to speed deployment in the education sector, paving to make the most of them, and in a study by Krig [Kridge 1995] about the justification for the introduction of computer education in third world countries to justifications four are:

2-7-1 The first justification: [The Social Rationale]:

Which emphasizes the need to introduce students to the uses of the computer and spread awareness of computing [Computer Awareness] them to adapt to the changes brought by the new computer to the lives of people in various fields of life.

2-7-2 Second justification: [The Vocational Rationale]:

Which aims to assist in the rehabilitation of the students to get jobs in the future related to one of the areas of computer applications, for example, the use of different texts as a therapist and tabular data and databases.

2-7-3 The third justification: [The Pedagogical Rationale]:

Which states that computer contribute to improving the teaching-learning process, and it is distinguished from many other traditional means for example, the paintings of different or video projectors diverse, also contributes to the computer to enrich and improve and develop and provide new ways to provide information to students in terms of being an assistant to the processes of education and learning

2-7-4 Fourth justification: [The Catalytic Rationale]:

Where they can develop schools for the better by bringing computers to it, With a computers in schools may improve the effectiveness of teaching and graduated from routine fashionable, and provides the justification that the computers useful in changing style of student learning to save and recall of information-based learning teacher and textbook primarily to another method requires him to process information and solve problems and to give an opportunity for the student to control by learning, and moreover, the computers may encourage students to learn through participation or through all of the Cooperative learning or Active Learning and not through competition individual only. [43]

2-8 The areas of the use of computers in education:

See Through references, research and studies researcher saw that there was agreement that the computer uses in education in one of the following areas:

- use as teaching material.
- be used as an educational tool.
- use in school administration.

2-8-1 The use of computers as teaching material [educational field]:

The entry of Computer education as educational material has passed the stages of multiple adaptive originally provided as case studies aim is to provide the basic principles of information with the aim of disseminating knowledge Informatics [Computer Literacy], has been aimed at this stage to spread computer literacy among the strata of society and to reduce the information gap. [44]

Then I started another phase then aimed decisions to deploy the use of computers in various subjects in order to develop applications and take advantage of technologies to optimize the connection emerged depending on the decisions more profound goal of the study of computer science and information systems as a science stand-alone, as well as to develop the base of qualified human that based on the information industry, research and development in the fields of computers in general. [45]

From the foregoing it can be argued that studies Computer has gone through three of these studies have been aimed at achieving certain goals in the first aimed at spreading knowledge of informatics by achieving some of the key elements, which include:

- ✓ Skill to use computers and understand the cycle as a means of educational and organizational.
- ✓ Emphasis on the role of computers in society and the extent of the services provided.
- ✓ Access to a minimum of understanding of the basics of computers and functions as well as the applied potential and related technologies.

2-8-2 The use of computers as an educational tool [field assistant]:

The idea of the universe Computer means effective learning at the hands of all of Atkinson, and Wilson, and that when it was put up programs designed in the areas of education all , where possible, in which the provision of information , as well as stored , allowing many opportunities in front of many teachers to find solutions to some of the issues or access to the results . [46]

It also resulted in the use of computers as an educational tool to reconsider by most educators about some of the traditional methods of education , and the extent performed for the purpose of education and illustration ways and means appropriate as a , add a thrill - for example - which was a computer is used as a means designed to deliver the knowledge imparted more critical role towards the effective and even forced educators to rethink about the formulation of behavioral objectives and to conduct a thorough analysis of the content of the material subjects . [47]

The researcher believes that it could be argued that the use of computers as an educational tool has led to show better results than those traditional methods used, it also distinguishes them also providing the element of time compared to the times that were consumed by traditional teaching aids, especially in his computer as a means of educational development trends more positive Computer mainly about

2-8-3 The use of computers in student affairs :

It is intended the affairs of the students everything that has to do with the students and the respect of their affairs in the school of public statements and private,

according to the right of the school to get it n as well as the matter of students within the school community, and the respect of their level of education and health, as well as their socio helping the school to do their part towards them. [48]

Because of the roles of the many and large carried out by the school to serve students who are the primary objective of its existence , it can not be limited to those roles within a narrow range , but we can say that everything that can provide a service to students and provide them with the right atmosphere to achieve balanced growth and destruction, and the formation of social figure together is solid and duties of the school and concerns n can be divided into aspects that can Computer to participate effectively in the area where students are as follows:

2-9 Aspects of Education and Educational:

Where can Computer applications through multiple and used in the areas of school administration to identify levels of students in the fields of science and knowledge of weaknesses or deficiencies through aggregates obtained by the students in the different tests, and then the computer helps the school administration at the speed of decision-making administrative correct with regard to those aspects thanks to that provided by the computer of many possibilities.

With regard to the aspects of education for students, most of the educational programs that take place during the school could involve computer and effectively, and it can parental roles educational many help to build educational aspects required in the students, and helps to instill the values and ideals in them,

can the school administration of Note educational aspects through what is entered via computer evaluations and follow-ups for students in general in this aspect. [49]

2-10 Aspects of social and psychological:

School strives to instill the values and ideals in the hearts of students and strives to form generation useful the service of his religion and his community and those around him, nor is that the equation of the non-observance of the aspects of psychological students and try to help them to configure themselves to be brick valid in their communities, and nurture the psychological correct a shared responsibility between school and at home and are not immune to one other and therefore the relationship that school strives to have established with the outside community in general and the family in particular, the relationship of the dimensions of the task and the need to build a true and accurate through which the exchange of trust and the distribution of roles, and the computer as a tool to help contribute to such relations The isotope composition of the wealth of many channels of communication and the rapid exchange of information and save it, it is better to broker such relationships because of the attributes of multiple applications through the ability to conduct communication and exchange of ideas and information between school and home. [50]

2-11 Health aspects:

Pass the lives of students in the school much of the developments, the understanding of young people vibrant, peppy, and the need for more attention to their health emergency or sustainable,

and the school in all cases to identify the conditions of their students health and observance, and try to provide services possible in this area, starting from the awareness of primary and the end to provide assistance to them with regard to their health, according to the offers of counseling healthy in such cases.

And can Computer that offers many services in this aspect of where confined to cases of health in the school and instruct workers to the correct ways to deal with such cases through what is provided by some computer applications and are available often have student advisor at school and that helps speed directing school administration to pan workers to take health methods in dealing with cases of sustainable health emergency or to other services, such as many in this aspect. [51]

2-12 The use of computers in school administration :

Has emerged the concept of computing administrative or what is known as technology management after the massive development witnessed by the administrative sector in general, we can say that the concept of administrative good does not mean dispensing with the existence of the human race , which , of course, still sits on top of the administrative hierarchy , but has become used machinery and equipment designated by the performance of its dense , which otherwise would have spent more time in his administrative work , and so the use of technology such as computers and all kinds of phones , fax, and others helped a lot in the conduct and facilitate the administrative work and which would not have been correct in light of its lack of easily or lack thereof . [52]

Computer stands on top of modern technology the most influential in the field of management in general and school administration, especially to meet the offers of great

services and amazing difficult otherwise implemented, and it is hard to do without it, especially in the aspect of information and decision-making, and those services provided by Computer Management School is mot impregnable 2002:

1 - convert data management to information organization and interconnected, Computer tool to convert statistics and data to the management information system to help Director of thinking and make comparisons, analysis and evaluation of the topics that will be decision-making by the manager and employees of an organization, rather than relying on the jurisprudence of personal.

2 - Computer help ease the pressure on the manager and save time by programming all the decisions in order to clear the competent employee implemented without reference to the Director in each act performed by the employee.

3 - Computer is not a goal in itself but it is a way to get technical, if the information system is the focus of the educational process management in any organization.

4 - get rid of the manual system and access to information that is often incomplete and does not produce the information needed by decision-maker.

5 - Computer helps rid the Director on the speed of the routine and monotony to provide more time for development and renewal processes at work.

6 - speed access to the information and retrieval , storage and downsize and reduce the effort and time required to search for them .

7 - provides the use of Computer Information Systems helps to improve the performance of employees and break the barrier of fear of the use of technology at work or handle.

8 - The Computer communication tool enables the manager to achieve the objectives required by the work and seeks to achieve them.

9 - Computer -related brews Wide Web [Internet] important opportunity for the school principal to form what is known as desktop mail , which provides for the Director of the means of communication and association with others without the need to meet them . [53]

It is the services provided by Computer Management School in the information needed by the school principal in the decision-making process:

- Convert information and data in school management information tidy and well organized.

- Computer relieves pressure on the routine work of the manager and provide him with the time and effort and fast delivery.

- A way to help get the information, which is the main focus of the administrative process at the school. [54]

-Get rid of the manual systems and personal self to get the information provided to management.

- The speed of access to information retrieval and stored for a long period of time and reduce effort in search and help provide modern records management school in achieving its objectives.

- Computer-effective communication tool to help the school director in achieving its objectives, which required him to work. [55]

2-13 The importance of using computers in school administration:

The use of computers in school administration is of great importance as is done through:

1 - Save massive amounts of data and information.

2 - Simultaneous operation of the organization's operations and extraction results.

3 - Access to the data and information required to be kept or that were run at maximum speed and the degree possible. [56]

It is also Computer is a ways to run the data and is characterized by its distinctive characteristics from the rest of ways to run other data.[57]

There are other advantages to the use of computers for school management is as follows: -

- Speed and accuracy both in terms of data entry, operation or production and retrieval of information.

- The ability to store data, information and programs.
- The ability to control errors.

- Helps to make decisions and solve routine many of the problems facing the administration, such as a choice between alternatives.

- The possibility of the use of computers in training. [58]

2-14 Positive use of the computer:

There is no doubt that there has been a significant development in modern management techniques to suit up with the changes in the external environment of the organization, which in turn affect its internal environment, it has become the administration used methods of modern technology. [59]

And knows the current era the era of scientific and technological revolution, the age of information and knowledge explosion, and the era of cohesion Organic career between the computer and the human mind, and Computer invaded all spheres of human activity contemporary in education, economy, media, services, and communication, even politics. [60]

Do not disagree that is where the computer language of the age and a modern cultures and scale of the development and advancement countries and a measure of human ignorance or illiteracy skirt at the moment is not ignorant arts of reading and writing, but ignorant of how to use computers and interact with him.

Abdul Wahab confirmed in 1996 that "Literacy is the foundation of our current , the individual who cannot read and write suffers from many problems , as well as in the near future will be to Computer literacy is equally important ." [61]

And the opinion of the Secretary Abdullah in 2010 that "We now stand on the threshold of a revolution new technology not less important than just the impact on human thought and we can say that we are beginning to enter into a new era of centuries of civilization and this is the information age, which is the Computer of the most important foundations. [62]

He added that the 2010 Root Computer is characterized by the following: [63]

- The possibility of programming.

- The possibility of processing the data and make mathematical and logical operations.

- The ability to store and retrieve data.

Chapter III
Search Procedures

3-1 Methodology of the study:

Researcher follow in the study experimental method, and constructivist approach, where they were building a test to measure the level of middle school students in Kuwait.

3-1-1 experimental approach:

Follow the researcher in the study and the experimental method, which is the appropriate method for this type of studies where a set of variables and the use of the comparison between the experimental group and the control group with the precise control of independent factors and observe what occurs to the factors [the result].

The researcher used two first experimental test that has been applied by the intelligent, which includes questions from a curriculum that is taught each stage of middle school education. , And the second control group, which was measured at a traditional manner.

3-1-2 constructivist approach:

Researcher use a structural so as to build the test by computer to measure the level of the students,

and build the test needs to be planning and implementation, and the results, and the curriculum needs to objectives, content and activities calendar, and these four elements depend on each other and build each element of which build on the item that preceded.

3-2 The research community:

Researcher selected a sample of schools in the area Ahmadi education so as to provide special computer rooms, fitted with all the possibilities of view, and study sample consisted of 60 students divided into two divisions [experimental and control].

3-3 Tools of the study:

Intelligent test to measure the level.

3-3-1 Intelligent building test:

1 - The objective of the test:

The researcher has built a test smart to measure the student's level of knowledge in the computer subject for students of the sixth grade Part II 2013 - 2014, and achievement tests of the tools relied upon by teachers and have competence in order to identify what has been achieved from the goals of knowledge and the effectiveness of some of the methods, tools and programs.

2 - test specifications in its initial:

The test was designed within the following specifications:

Microsoft Office Access

- The formulation of test items:

Been formulated test items based on the concepts that have been extracted from the book of informatics your Ministry of Education in Kuwait, and in the light of the test specifications, have been drafted paragraphs testing of test type of multi-has been drafting vocabulary test to ask a question on the whole concept almost, is this pattern of more patterns in an objective test patch.

This kind of types of questions of objectivity and the best measure because it targets the mentality of the rest fail to other substantive questions about the measure. [65]

The researcher took into account when drafting the following paragraphs:

- To be a test and paragraphs clear and unambiguous.
- To measure the targets set for it [target knowledge].
- To be in the range of the unit has been selected for the experiment.

- Questions that are suitable alternatives to the levels of learners.
- To be one of the answers to these questions are the right away from the complex.

- Paragraphs linguistically correct.

- Be suitable camouflage and clear in terms of meaning.

4 - in its initial test:

Based on the above put the researcher in its initial test of 20 questions, was presented in its initial test on a group of gentlemen arbitrators and experts in the computer and information systems, have been accordingly changed some of the questions and modified.

5 - the formulation of test instructions:

Been formulated test instructions clearly, which describes the objective of the test and how to answer test items were placed at the beginning of the test.

6 - sincerity test:

First: Believe arbitrators:

View Finder test in its initial group of experts in the field of computers and information systems for the purpose of:

1. Ensure the adequacy and appropriate testing.
2. Ensure the safety of the wording, and explained every question from the test questions.
3. Recast [Amendment] Any question that needs to be.
4. Ensure comprehensiveness and balance and objectivity of these questions and the relevance of the objectives set for it.
5. Add what they see fit questions.

Were distributed to the test in its initial [9] nine experts, and the number of questions before the show to the experts [20] twenty questions, with a three answers for each question, and after viewing the test on a group of experts, the number of questions to [15] fifteen, was delete [5] five questions, as has been the replacement and switch [5] questions, as has recast [3] questions.

The Table [1] presents expert opinions about the appropriate test questions to study the "intelligent design a program to measure the level of middle school students in Kuwait", the researcher has identified a proportion of 70% or more of the expert opinions to accept the test questions.

Table [1]

Expert opinions about the appropriate test questions

%	Repetition	Question
100	9	1
100	9	2
88.8	8	3
100	9	4
44.4	4	5
100	9	6
44.4	4	7
100	9	8
100	9	9
100	9	10
44.4	4	11
100	9	12
100	9	13
100	9	14
88.8	8	15
100	9	16
100	9	17
44.4	4	18
100	9	19
44.4	4	20

And Table [2] presents the results show test questions to the experts:

Table [2]

Results show test questions to the experts

Delete	Replacement and substitution	Reformulate	Number of Questions		experts
			After the show	Before the show	Test questions
5	5	3	15	20	9

7 - the stability of the test:

To check the stability of the test, the researcher used by retail equation Spearman Brown Sperman Brown by finding the correlation coefficient between the total marital questions and the total individual questions.

$$\frac{2r}{1+r} = S$$

S: the stability of the test

r: Pearson correlation coefficient

And calculates the Pearson correlation coefficient was the result [0.73]

Thus, the value of S = 0.84

This shows that the test has a high degree of reliability and validity for measuring the level of achievement.

8 - Time Calculation test:

Account was the right time for the test by calculating the average time using the following equation.

$$\text{Test time} = \frac{\text{he fastest time in answering a pupil [30] + slower time}}{2}$$

Applying the equation, the average test time 35 minutes, a time suitable to perform the test

9 - coefficient easy:

Coefficient determines the ease with paragraph one of the paragraphs of the number of test subjects who answered the correct answer to paragraph divided by the number of testers multiplied by a hundred.

$$\text{Coefficient of ease} = \frac{\text{The number who answered the correct answer}}{\text{Number of}}$$

And can fit easily accepted coefficients between 10% to 90% [66]

10 - Coefficient of discrimination:

Discrimination coefficient was calculated for each question [single] of the test questions, as follows:

1 - Sort degrees pupils from highest to lowest.

2 - split into two grades: 50% represent higher grades 0.50% represents the lower grades.

3 - determine the number of student who answered the correct answer in each group for each item separately.

4 - Apply the following equation.

$$\text{Coefficient of discrimination} = \frac{\text{sum S - sum L}}{\text{1/2 N}}$$

sum S = Number respondents who answer correctly [in the Supreme Group]

sum L = Number of those who answered the correct answer [in the group lower]

N = The total number in the two groups.

Any paragraph with the distinction of 0 - 0.19 is considered weak and indistinguishable advised deleted,

and any paragraph of discrimination Coefficient of 0.20 - 0.39 of discrimination acceptable, any paragraph with the highest distinction of 0.39 are considered good discrimination. [67]

Table [3]

Coefficient of the ease & Coefficient of discrimination

Coefficient of discrimination %	Coefficient of the ease	Number of the question
50	80	1
40	76.66	2
30	73.33	3
50	66.66	4
50	80	5
30	33.33	6
40	40	7
70	53.33	8
50	73.33	9
60	53.33	10
60	66.66	11
50	73.33	12
50	73.33	13
60	46.66	14
50	56.66	15

Statistical treatment:

Been using the statistical software SPSS [Static Package For Social Science] for statistical treatments.

Chapter IV
Analyzing the results of the study and interpretation

Researcher will address in this chapter's findings, and answer questions and hypotheses, and logical explanations for these results:

4-1 First hypothesis:

There is a strategy for effective learning cycle in the achievement test to measure the level of middle school students in Kuwait.

To measure the effectiveness of the learning cycle strategy in the achievement test to measure the level of middle school students in Kuwait researcher used the equation [Blake] to calculate the percentage gain amended.

It should be worth ratio to average earnings [1.2] and more as an indicator of the effectiveness of the program has been the researcher calculates the ratio of average earnings for the program through the students' grades.

Table [4]

Shows the arithmetic average of the ratio of average earnings for the experimental group and the control group

Denote the ratio	Percentage gain	arithmetic mean		The group
		Following	Previous	
Signify	**1,259**	**165.21**	**131,1**	The experimental
No Signify	**0,076**	**135,8**	**132,6**	Control group

Shown in Table [3] that the Percentage gain average earnings for the experimental group [1.259] and the control group [0.076].

The kit any The experimental Signify : it has reached the minimum for judging the effectiveness of the method used to instill in students positive attitudes toward substance Computer [IT].

In the control group is a function that is, they did not reach the minimum for judging the effectiveness of the method in the acquisition of positive attitudes towards substance Computer [IT], as it sees the BlackBerry [[Black]] that the ratio should not be less than [1,2] even longer effective way acceptable. [68]

This is because the researcher test the effectiveness of the teaching of the Computer and the size of the significant impact on students' abilities to the following matters:

1 - test away from the normal way of learning and goes beyond that to the use of multiple stimuli combining written text, image and sound, deepening understanding and comprehension.

2 - Increased integration of the learner in the classroom, which consolidates learning through the large number of questions and provoke discussion.

3 - Control the teacher in the management of the educational situation and the discovery of vulnerabilities and concepts that are difficult to be absorbed, and this opens the way for the teacher to deal with these things as he sees fit.

4 - Linking the learner learns what real life gives meaning and content of more and better to learn and thus its interaction with it.

5 - Computer helps to involve all the senses of the learner, which consolidates learning.

4-2 Results concerning the imposition II:

Under the second hypothesis, "There are no statistically significant differences in the significance level [α = 0.05] between the average grades of the experimental group and the control group scores in the achievement test.

The researcher used [T-Test] to calculate the significance of differences between the average scores of students in the experimental group and the control group in a test computer.

Table [5]

Test [T-Test] to demonstrate the differences between the mean scores of experimental and control groups in the test computer.

Significance level	value T Tabulated	value of T calculated	Standard deviation	arithmetic mean	Number of students	The group
0.01	1.67	3.278	19.54	85.83	30	The experimental
			12.86	71.83	30	Control group

The table shows that the value of [T] calculated is 3,278, while the value of [T] Tabulated is [1.67] when the degree of freedom of 58, and it is rejected the hypothesis of zero and accept the alternative hypothesis,

which states that " no statistically significant differences in the significance level [α = 0.05] between the average grades of the experimental group and the control group degrees in Computer test for the experimental group.

This is because the superiority of the experimental group to the control group in the achievement test for the following reasons:

1 - Increase the level of participation by students, which led to an increase in questions and inquiries and identify inappropriate elements among students.

2 - appropriate testing of the concepts contained in the module.

3 - the application of the test properly and according to what is planned.

4 - Control the teacher in the presentation of educational material as it sees fit during the presentation.

5 - The use of multimedia in teaching works to reduce distractibility and lack of follow-up, because the elements of multimedia,

which addresses the senses evokes attention and provoke the mind, making the learner to communicate with the teacher and with the educational situation as a whole.

6 - Display learning content makes video and audio information stored in memory by more than a picture and this helps to speed remember.

4-3 Test to measure student improvement:

The researcher has developed a scale to measure improvement in students study sample and the scale is:

Table [6]

Test to measure improvement

م	Words	Significantly	Moderately	Small
1	I feel easily learn Computer Science.			
2	I'd like to relieve some of the topics of computer decision.			
3	I feel easily when the distinction between the subject and the subject.			
4	The better to increase the share of the computer every week			
5	I feel like not being able to understand a lot of the subjects			
6	I feel difficulty in keeping computer components.			
7	I like to spend my spare time in the study of computer			
8	I see that the computer does not help me learn to think			

9	I think that learning computer gives me the ability to quickly understand			
10	I think that learning is necessary for each computer students			
11	I see that the teacher Computer respects the students' ideas			
12	I feel tightness in the absence of a teacher Computer			
13	I like to cooperate with the teacher computer			
14	My love for the teacher of the computer makes me try hard in his studies			
15	I would love to become a teacher, such as computers in the tender and Grandpa			
16	I see many examples that help me understand the lesson Computer			
17	Listened attentively to the teacher's questions in the share of computer			
18	Teacher's teaching style brings my attention throughout share Computer			
19	I'm bored during the explanation of the teacher to share computer			
20	Computer teaching method does not make me understand the subjects			
21	I feel that the time in the computer share a long and tiresome			
22	I see that the use of means of communication and education has no value in teaching computer.			
23	I like to spend my spare time in the study of computer			
24	I feel that the material Computer enjoyable			
25	I feel upset when any work activity computer			
26	I feel pride when I answer questions from computer-related material.			

And Table 7 shows the differences between the scores of students of the two groups (experimental and control) towards computer education in the measurement of the direction of improvement using the "T test"

Table [7]

differences between the scores of students of the two groups (experimental and control) towards computer education in the measurement of the direction of improvement using the "T test"

Subject	Group	Number	arithmetic mean	Standard deviation	Value T.	Significance level
Computer Material	The experimental	30	**2.6055**	**0.27148**	**4.346**	Indication of at the level of 0.01
	Control group	30	**2.2109**	**0.4358**		
The importance of computer material	The experimental	30	**2.7695**	**0.22250**	**2.803**	Indication of at the level of 0.01
	Control group	30	**2.5391**	**0.40838**		
Computer teacher	The experimental	30	**2.6992**	**0.23941**	**3.024**	Indication of at the level of 0.01
	Control group	30	**2.4453**	**0.41022**		
Style and the way	The experimental	30	**2.7813**	**0.17961**	**3.330**	Indication of at the level of 0.01
	Control group	30	**2.5195**	**0.40673**		
Enjoy and attention	The experimental	30	**2.6563**	**0.26703**	**3.456**	Indication of at the level of 0.01
	Control group	30	**2.3789**	**0.36683**		
Total score	The experimental	30	**2.7023**	**0.17137**	**4.115**	Indication of at the level of 0.01
	Control group	30	**2.4187**	**0.35012**		

The previous table shows the presence of statistically significant at the level (0.01) in the direction towards the computer material for the experimental group, which conducted a test level using the computer at the expense of the control group.

Chapter V
Results and recommendations and proposals

5 - 1 First results of the study

1 - There is a strategy for effective learning cycle in the achievement test to measure the level of middle school students in Kuwait.

2 - There were statistically significant differences in the significance level [$\alpha = 0.05$] between the average grades of the experimental group and the control group degrees in Computer test for the experimental group.

3 - The results of this study also indicated that the highest averages for students' grades in the experimental and control groups in the post test has been in favor of the experimental group at all levels.

4 - researcher attributed the superiority of the experimental group in this study, the ability of the computer as a teaching modern, and as a way to measure the level of students, and to contribute to clearly identify the level of student achievement and therefore the ability to raise their level of knowledge and science.

5 - featuring tests Electronic Computer as a flexible and modern to measure the level of knowledge of students, due to the unique characteristics which is characterized by when compared to any other means used by teachers in their classrooms to measure the level.

These results indicate the effectiveness of the test and its success in achieving the goals that put for it and its ability to measure the knowledge level of the students and to identify the level of achievement and thus modify the trend toward educational material, maintain and install the information to be taught and raise the level of students' owners a low level.

5-2 Second, the study's recommendations:

In light of the results of current research and previous studies, the researcher recommends the following:

1 - need to focus on using modern information technology and follow up all new and used in all educational and academic detective, because of its effect on the collection and understanding of the students.

2 - Use various media instruction curriculum different, and in order to support self-learning Assistant, which helps the educational process at the school.

3 - create a department of the Ministry of Education to oversee the design of educational programs using a computer to deal with the different teaching methods.

4 - provide schools with the necessary infrastructure of laboratories and rooms offer computers and monitors to accommodate modern technology and the application of modern education in all schools.

5 - Training teachers on how to deal with computer programs and how to use it, processed and prepared for display.

6 - the production and recording of educational materials on computers and using CDs and distributed to schools and learners.

7 - The use of educational technology as an area is interested in teaching and learning and not devices and materials.

8 - the focus of the use of Computer and techniques on student learning and help them acquire the skills that are needed in education and in his career.

9 - technical successful is seeking to achieve educational goals to achieve educational goals clearly defined and shared by all members of the school, such as students' skills, and upgrade the capabilities of teachers by employing information technology in all educational activities, and the intensification of awareness of the importance of technology in education.

10 - taking into account the rehabilitation and training of students, teachers and administrators on the use of computers and modern technologies.

11 - must be the uses of information technology and computer to keep up with the changes of the times and modern.

12 - the establishment of a special unit of the ministry produces software to provide software programs that serve our students and our curriculum and at reasonable prices.

13 - teachers create different levels and prepare them to accept a deal with the computer as one of the achievements of the technological age, which may help to improve the level of education in our country.

14 - building computer programs for students with low levels of teaching subjects.

15 - Work to make the computer labs and laboratories in our schools more importance and relevance through employed in the teaching of different detective and not be restricted to teaching computer culture.

16 - the quest for the revision of the methods and means used in the teaching of computer and work on the introduction of new means and methods.

17 - urged those interested in this field [computer and software] on a lot of studies and research both a theoretical and experimental are looking at how to take advantage of this Computer.

18 - The need to take the results of this study and the findings into account when considering the development of curriculum, developed or modified in the computer material.

19 - Encourage education departments in all areas of Kuwait to take advantage of the lessons electronic teachers and design parameters and add them, after they have been judged,

to the sites of departments instruction on the information network [Internet] so that they are available for teachers and students as well as parents.

20 - is to facilitate the electronic exchange of lessons between teachers and students at the school level by taking advantage of these lessons that promote their courses of study, as well as encourage students to self-learning by using these lessons outside the classroom and school environment.

21 - encourage teachers to enrich the school library or the halls of learning the lessons of electronic sources and keep them in order to evaluate and make the necessary adjustments in order to use them to enrich the educational process and curriculum-based.

22 - encourage teachers to do their own design lessons electronically and commensurate with the nature of the problems they face in their classrooms to take into account individual differences among students and the growing numbers of students.

23 - To encourage researchers to conduct further scientific studies that show the extent of the use of automated means learning not only in teaching and curriculum information by but in the rest of the curriculum to the ranks of various educational levels.

24 - to take advantage of computer software commercially available that are designed with the aim of education and experience in the educational environment in Kuwait in order to overcome the obstacles facing students in education.

5-3 Thirdly, the proposals:

Through the problem of the study and its findings, it is still one episode of rings are needed to complete the long haul, so there are many problems and areas of research that need to contributions of researchers in this field:

1 - study the best methods for teaching Computer.

2 - A study in the evaluation of software available on the market to identify the suitability of the student, and curriculum and its ability to achieve the top scorer for which they were created.

3 - the study of the theory for the design of tests measuring the level of educational software and how to develop them.

4 - A study in the obstacles that prevent teachers use of computers in education.

5 - A study on the relationship between the computer and the computer as a teacher for the average trend.

6 - A study on the ability of the computer to develop the skills of the student knowledge.

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