

Chapter Two

Conceptual Frame

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This chapter purposes to:

- 1- Search on the historical back ground of the computers.
- 2- Search on the ancient and modern types of hard ware and soft ware.
- 3- Recognize the impact of computers as teaching aids.
- 4- Follow up the massive development of internet and computers mechanism.
- 5- Identify the ideal and appropriate types of software for classrooms.
- 6- Recognize the main domains of computers in our schools.
- 7- Categorize the domains of audio-visual materials and groups according to its benefits to learning.
- 8- Base standards for computer competency education.

Chapter Two

The conceptual frame

2.1-Computers, a historical background

Computers are so named because they were first designed to deal with numbers (to compute). But modern computers also process words, draw, reproduce, and perform many functions. The early history of computers can be traced to Charles Babbage, an English inventor who designed an (Analytical machine) in the 1830s, that can be theoretically do some of the things computers do. Yet it was never built, had it been it would have covered an area equal to a football field and required the power of five steam engines. A more practical plan came from the American inventor Herman Hollerith who invented a calculating machine, which relied on punched cards. In the year 1924 the International Business Corporation was adopted (IBM). In 1940 an essential piece of a computer's puzzle was invented and adopted by an English mathematician George Storer, the Second World War provided a stimulus to computer developments in the USA. In the meantime the British developed a computer using vacuum tubes instead of switches and used to decode German messages during the war. Shortly after the American built the ENIAC, the most sophisticated computer of that time. After 1947 a crucial breakthrough began at Bell Laboratories in the USA when transistors were invented, computers became much faster, smaller and cheaper than the vacuum tube computers¹.

¹ Winter, B. Roy & Leo Evan (1980) Educational Technology to the Year 2000.

Microchip was invented with the micro processors in 1970's allowing information to be sorted and manipulated in small space. During 1980s, computers became progressively smaller, better and cheaper the hardware became more powerful, software became more sophisticated encouraging building better drives and faster processors.

By the year 1992¹, the computer industry was the fastest growing industry in the world. Now days the computers are guiding aircrafts, controlling traffics, processing words in schools and doing many things, in fact they became the heart of modern civilization.

Computers as teaching machines is widely spreading including all aspects and dimensions of teaching and learning ,introducing lessons by performing teacher's every day tasks , finding new resources of learning .

¹ Bork, Alfred (1995).Learning with personal computers. Harper & Row, NY

2.2 -Teaching and Audio-visual materials.

I selected here some of many reasons which we use audio-visual materials for: In fact we use them to achieve one or more than one of the following:- Arouse and maintain interest, Illustrate, Provide individual differences. Stimulate imagination and provide a busy work. All these functions can be easily achieved in teaching through computer classroom in our schools. The role of audio-visual materials: Theoretically, it is very easy to say, for example: "Sentence is a group of words which are set together so as to make a statement or to ask a question or to make a request." However, when you present such a fact to your students without audio-visual materials you will find your self in a critical position although it is a simple fact. However, using audio-visual aids is the quickest and shortest way to achieve our goals inside the classroom.

Definition¹: Audio-visual is a systematic way of designing, carrying out and evaluating the total process of learning and teaching in terms of specific objectives for an effective learning. According to this definition the teacher must treat the student on the basis of auto mated learning which considers that every Human being is a system, They say every person is in fact a system, body temperature, heart rate, blood pressure are regulated and maintained within certain limits by specific organs, these organs are systems of the total human system.

The Cone of Experience

An American educator Edgar dale designed the cone of experience in which he organized all kinds of audiovisual devices according to their reality and importance. These categories begin with the direct purposeful experiences at the bottom of the cone ends with verbal symbols at the top. The types of audio visual material are classified according to types of experience, which are. The cone contains about eleven categories of audio – visual aids in a cone shape these categories depend on the three types of learning which are: learning by doing. b) Learning by looking. c) .Learning by mental analysis. And it contains the following items

¹ Dale, Edgar (1969). AV methods in teaching. Dryden press. Illinois USA.

A / Direct experiences:

Direct purposeful experiences.

Contrived experiences.

Dramatized experiences.

These three types are classified under learning by doing wherein the learner must participate directly into field workshops to give first hand experiences from a factory or a a farm or any other direct purposeful experience.

B / Pictorial Experience: Contains¹:Exhibits. Museums .Study trips .Still pictures .Motion pictures. Educational movies .Television.

Radios and assets players.

Realistic drawings.

The mentioned categories depend on learning by looking and observing.

C / Highly abstract experience:

It comes in the pinnacle of the cone, which depends on learning by mental analysis where verbalism dominates.

The domains of computer in the cone

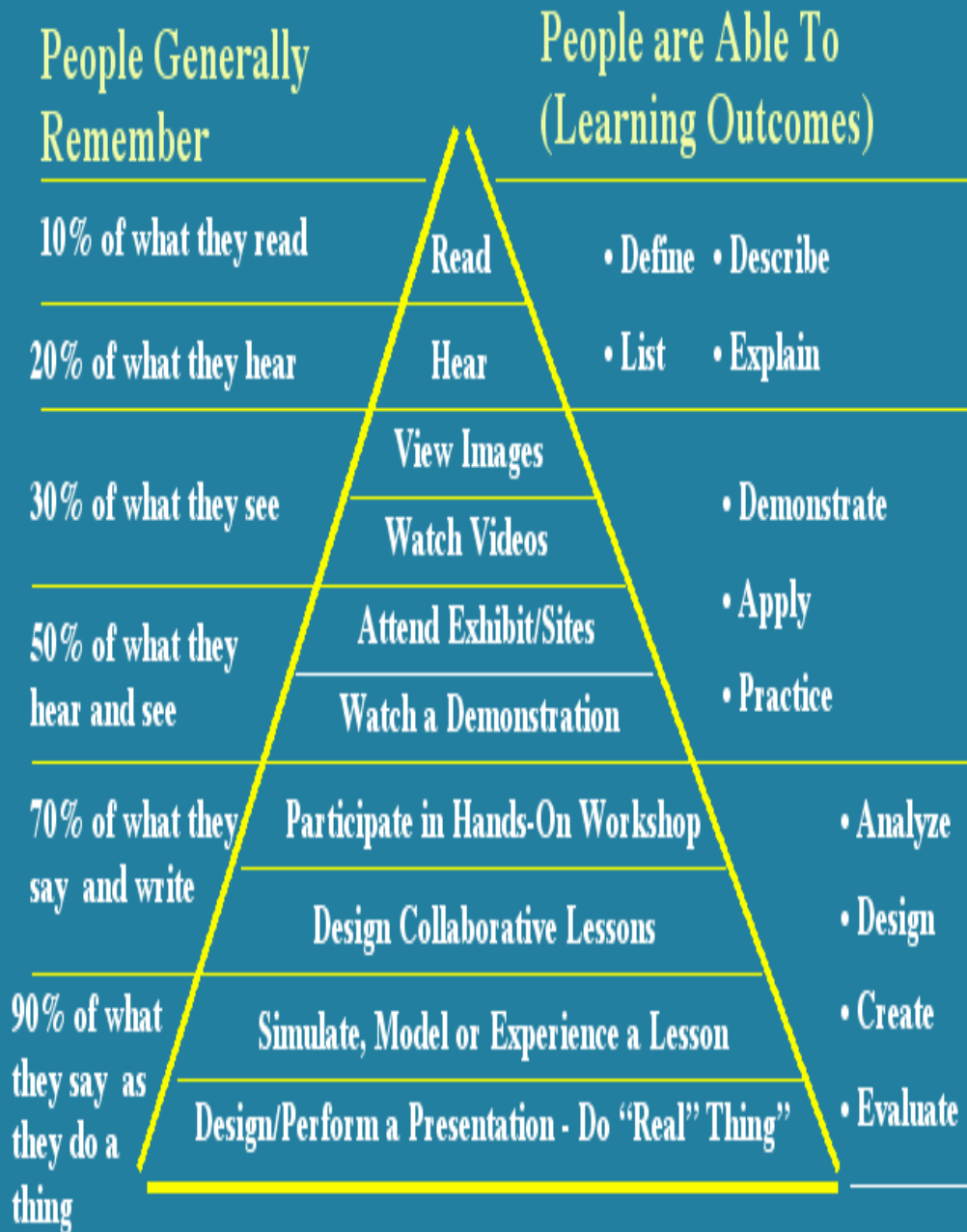
Computers can easily dictate the three types of learning according to the cone of experience as follows:

- 1-In the field of direct purposeful experience a computer can easily manipulate though into direct first hand work using magnificent hardware and software groups with it's broad abilities in changing horizons we can easily contrive many experiences into tactile images with personal computers or classroom computers, also it simple to prepare dramatize the syllabus and the contents of our curriculum by using suitable software and ready made programs .
- 2- In the dimension of pictorial, computers participation is great effective and powerful and everlasting because this is the main domain of computer's graphics and illustrative tool, which are available in many types of computer software with variable types or processing programs, it is easy to compose still pictures, motion pictures, educational movies, TV. Games .radio and realistic drawings.
- 3- Highly abstract and mental analysis filed is now more access able with computers inside our classrooms there are no deters in changing verbalism with realistic and fresh thinking abilities.

¹ Dale, Edgar (1969). AV methods in teaching. Dryden press. Illinois USA.

Consequently, computers with its continual abilities can at once overwhelm the whole domains and types of the educational cone of experiences, we can design a computer cone consisting most advanced and better than the cone of experiences it self , and that is what the researcher is going to do later on.

Dale's Cone of Experience



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Adapted from Wiman & Meirhenry ,
Educational Media, 1960 on Edgar Dale

Figure 1

2.3-Computers and classroom activities.

We have five major activities in our classrooms that we directly or indirectly perform with our students on a daily basis, these Activities are:

Teaching skills.

Presenting facts.

Organizing knowledge into concepts.

Stimulating imagination.

Developing attitudes or changing the existing ones from bad to good to better to best.

These activities must be taken under willing to learn to make a relation between these activities and audio-visual devices we must know that willing to learn is conducted with interest and being eager to learn, consequently the student must be eager to participate into these activities to achieve our goals inside the classroom.

1-Teaching skills: We have four skills in teaching English, Listening, speaking, reading and writing. In these four skills the computer can easily dominate with it's infinite instructional multimedia, computers now have spoken abilities in native tongues to steer our students in a tutorial manner also in managing discussion groups for listening and speaking , also in reading and writing we have many options through computers ,computer can straightforwardly guide students to the most excellent ways of reading and writing using (PowerPoint) slides or other multimedia there are many readymade software to teach throughout.

2-Presenting facts: This is one of the most normal jobs of computers, facts are to:

- a) Generate data at students' request to illustrate relationships in models of social or physical reality.
- b) Execute programs developed by students.
- c) Provide general enriched exercises designed to stimulate and motivate students.

2.4-The domains of computers in face to face sessions:

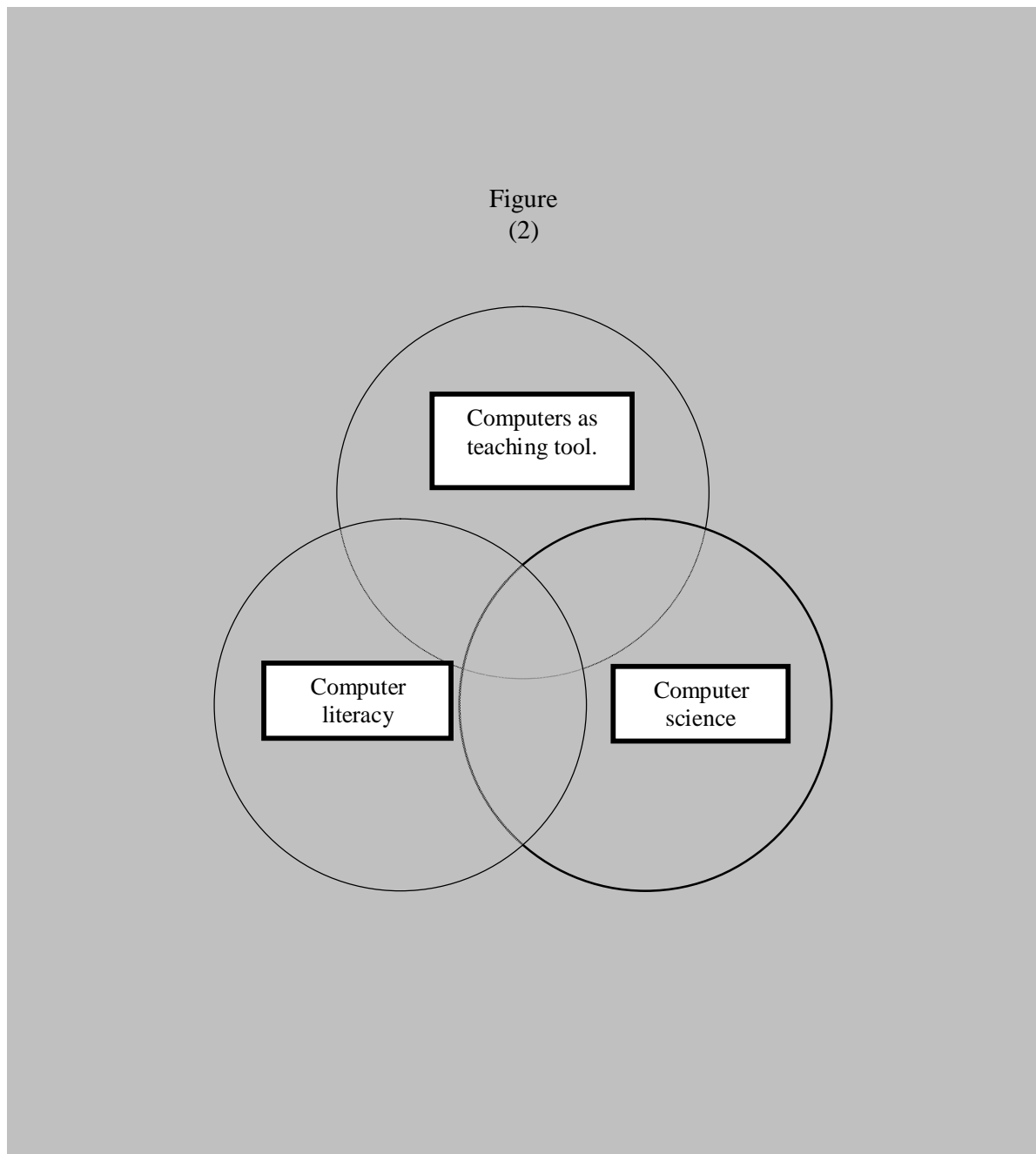


Figure 2

Computer literacy:

The common aspect of computer usage is the connotation related to computer literacy; in this domain the concerned sectors are collection of works and cultures in different aspects and dimensions of the community , they are not expected to be computer high-quality dealers nor they are computer coordinators .The three domains of computer in our schools are not separated from each other there is some sort of interaction between them and they benefit each other ,consequently this domain is very important because it means getting rid of the psychological deterrents of those who are going to use the classroom computers ,the computer literacy can help the teacher to maintain his efforts in presenting the facts and feeding back without bombarding the audience with more tedious and routine every day orders .

In fact this domain is the real foundation of our lessons and every day tasks, consequently teachers should be concerned to sustain this dimension using more scheduled training to create suitable spheres to prepared lessons the students should be equipped with care and ordered to use their machines in moods of smooth and successful manner. Treating with the hardware and soft ware cautiously should be a habit in this domain.

This domain is the projected one for our research because it means using computers as an audio- visual aid or device in this dimension the computers can easily give us the whole three types of experiences:

Direct experience.

Pictorial experience.

Highly abstract experience.

There are also many domains of computers:

- 1- CBE: Computer Based Education, refers to virtually any kind of computer use in educational settings including presentation, drills, tutorials, simulations, instructional management, supplementary exercises, programming, database developing, using usual words processors and other application, it refers also to stand along computer learning activities .
- 2- CAI: Computer Assisted Instruction, a narrower term refers to drill and practice, tutorial or simulation activities offered by students or teacher directed instruction.
- 3- CMI : Computer Managed Instruction refers to computers by school staff to organize students' data and make instructional decisions or activities in which computer evaluates students' test performance or guides them to appropriate instructional resources and keeps records for their progress.

"According to mentioned domains computers are the key point in practical education so teachers should get involved into IT instruction to be fit in performing their every – day tasks "Teachers are the key to success in any educational change. They must be trained, supported, and provided with adequate resources in order to be successful in implementing new teaching methods." (Braun, Moursund, & Zinn, 1992)

Educational technology is now available in our homes through internet hypermedia the more they use websites the more they will get proficient in presenting data and information to students

2.5 -Options of using computers in classrooms

Numerous options are available in every day use of computers as teaching machine, they can be programmed to judge the students input and to tailor lessons to teach individual level .Computers can present instructional input and require mastery of each step inside the class, the sensitivity of instructional designer to patterns of student learning is necessary to advance in teaching.

Computers provide considerable flexibility and allow teachers to produce tailor – made programmed study for individual students at their pace. " The studies in psychology of learning suggest that the use of educational computers in teaching has several advantages "1 according to their theories all learning is based on perception , the higher processes of memory and concept formation cannot occur without former perception , students can attend to only a limited amount of information at a time , for more information to be received we should stimulate sight and hearing frequently and here comes the job or the role of computers as stimulators .Computers can also jump over geographical and psychological barriers, they can expose students to experience beyond the classroom, they can disseminate instruction across large areas making education accessible and easy to understand. Now the mass storage of media have given the instruction better tools, CDs,. are used to store large amount of data like encyclopedias , we can gain and view films or related topics and arrange information to our students into a logical and easy sequence by using computers in implementing ,testing ,presenting , then revising and feeding back.

Available Hard ware and Software:

Various hardware and software are now obtainable in teaching through computers, required hardware in teaching depend on the particular

situation of the teachers and schools according to the considered situation and available hardware comes the decree of using the priority tool to use . In fact there different types of working in using computers as a teaching machine in this manner:-

a) One computer class: This option is inexpensive it needs only one computer and LCD. Projector (Data show).The teacher's role is to operate the computer with the suitable software or preparing slides of his lesson then using the data show to present the items of the subject systematically.

Required hardware and soft ware

No	Hardware	Software	Cabling
1	Computer	PowerPoint	2USBs.
2	PC. monitor	slides	Normal cabling
3	LCD. projector (Data show)	CDs.	Normal cabling
4	Suitable speakers	Various programmes	Normal cabling

(Table 1)

b) Computer Laboratory:

This option is more expensive, it requires more facilities to organize a classroom, and here are the needs:

1. A suitable large room.
2. More than 25 computers.
3. Computer accessories.
4. Cabling accessories.
5. Amplifiers.

6. Large LCD. Monitor.
7. Students' desktops.
8. Brightness dimmer.
9. Operating system.
10. Skillful coordinator.

c) Compact Discs: (CD¹): Compact plastic disc containing a thin metallic layer that is used to store a large amount of information .The most popular use of CDs today is to record and play back high quality sounds. " A high precision laser beam is used to be in a microscopic bits in a thin metallic layer of the master disc , the bits are layered in patterns that can be read by the compact disc player , a CD contains a low power laser and high perception lens and mirrors the laser directs a narrow beam into tracks of spinning CD , a photo detector picks up the the scatter from the disc pits and sends a signal to the computer which converses the signal into sound , the same can be used for storing kinds of digital information as well including computer programmed pictures and animations .

Available software

Measureless amount of programmes and multimedia are available for English teachers to use in their lessons, the swift rush and progress in computer developing remained many functional options and assorted alternatives for those who are involved in using computers inside the classroom . Here are some of these practical programmes to use in presenting language skills (listening, speaking, reading and writing):

¹ Muhlhousser, Max (1993).Cooperative computer aided learning.Kluwer academic publishers, London, England

Microsoft enabled options:

Microsoft Word, for developing writing skills in processing words.

Microsoft Power point for presenting lessons in slides as flash cards.

Microsoft FrontPage for designing websites and homepages.

Microsoft Excel for treating with numerical tabulates.

Microsoft Access for database designing.

Photoshop for images editing.

Reasons for using computers in the classroom:

- 1- Arousing and maintaining interest:
- 2- Illustrating.
- 3- Saving time.
- 4- Providing individual differences.
- 5- Saving money.
- 6- Saving effort.
- 7- Stimulating imagination.
- 8- Providing a busywork.

Computers as smart boards:

It is anew and completely deferent role for computers inside classrooms, this new role is computers as smart board the equipments for this board are as follows:

- a) A large monitor white board specially designed to fit the normal boards connected with a personal computer.

- b) A normal personal computer with normal utilities and capacity.
- c) A data show, a special focusing machine to reflect the components of the computer's soft ware.
- d) The targeted software.
- e) ISP. Internet Service Provider.

This smart board is easy to deal with , teachers who can use the normal PC might use the smart board, either navigating into internet provider or without internet provider ,if without internet provider they use it with needed software , just click to start , choose the prepared target or content and the lesson begins .Touching the board surface with fingers is enough to operate the system and to present any needed program , they might use colored pens specially manufactured and produced for smart boards ,teachers and students might also browse internet web pages if they needed any internet resources.

The routine tasks of teaching and presenting lessons become more joyful and interesting with the smart boards. Daily assessment could be observed through the smart boards frequently, solving learning and teaching problems will become more accessible when we use these smart boards.

2.6-Education through webucation

Internet is now playing a great and brilliant role in education many internet options are now on hands of educators to perform lessons through internet sites in this part of the research there will be some practical implementation of internet in various educational fields including website designing for educational purposes and schedules and courses suggested for related issues

Required apparatus:

- a) A suitable classroom.
- b) One class computer.
- c) Internet service provider .(ISP)
- d) Required cabling.
- e) LCD projector.(Data Show)
- f) A large LCD monitor- or any white clean surface –
- g) Skillful computer teacher.
- h) List of educational websites related to the syllabus.
- i) Suggested courses. With computer in the classroom.
- j) Parent control software.

Many options may be offered through internet facilities inside our class rooms, it is so easy now to create class web page for students, also our students might create their own page after a simple training , they will enjoy playing with icons of specially delivered photos . There are many children educational web page through which we can handle vocabulary, grammar, and other content related issues to our students. Internet components should be controlled with parents and teachers to avoid any misleading while exploring and navigating into internet cites and galleries, The most important role of internet is designing and operating educational learning virtual atmosphere for teachers and students ,in the suggested manual the researcher designed a model intended to handle the content of Sudan Practical National English it a sample of objective guiding . The Electronic mail is also another option

which delivers a wonderful service for teachers and students to increase relationships between students and their instructors, assignments could be submitted with quick feedback from teachers to students through E-mail ,internet chat rooms might be created to address students in whisper rooms to give materials of the English contents easily without going far away from our schools or homes . Internet forums might deliver a great push to students to expose their opinions and to share other friends of their classmates .teachers could easily create special forums to handle teaching skills , or even to perform lessons through these forums , more over we can address parents and discuss duties and their children progressing and behavioral objectives, so we can solve many educational difficulties. In side classrooms teachers could browse massive we page after filtering all available web cites , that means a great source of information is obtained to educators and parents to guide the children into a healthy and safe ways of tutoring using internet facilities.

2.7- Previous Studies:

2.7.1- Hollands, Fiona Mae. A study of computer-integrated education in secondary schools in Nyanza Province, Kenya a **PhD dissertation in educational technology** in the University of Pretoria (South Africa) year 2003. This study focuses on computer-integrated education in public secondary schools in the Nyanza Province, Kenya with the aim to investigate how computers are used in schools and to provide evidence on the obstacles that inhibit effective implementation of computers in instruction and learning. It examines different government and school policies regarding the use of computers in the classroom against the background of the use of computers in teaching and learning in developed and developing countries. Data were collected from the Ministry of Education, the directorate, curriculum specialist, principals and heads of department. An in-depth investigation was also conducted on a sample of computer teachers, principles and heads of department representing rural, urban and suburban areas and the collected data analyzed through the use of descriptive statistical techniques. The research revealed that the Kenya Government has formulated a computer education implementation policy in support of the use of computers in secondary schools. However, no written policy document has been circulated to schools. It has further been revealed that the government has no funds for purchasing computers for schools and that no evaluation has been done to assess the effectiveness of computer education in schools. Principals reported that they have a computer policy and that they practice whole-school integration of computers in the teaching of computer literacy, administrative work and traditional subjects such as Accounting, English language, Mathematics and Science Education. Computer teachers regarded themselves competent with computer literacy skills and with the teaching of word processing, spreadsheets, data bases and programming. They are less confident to integrate computers into the teaching of traditional subjects, although some of them integrate computers into the teaching of various subject topics. Shortcomings such as a lack of teacher training in the use of computer technology in the teaching of subjects, a lack of adequate computers and a lack of suitable software were exposed by the study.

2.7.2- Derscheid, Craig Early (childhood educators' attitudes toward and knowledge about computers in the classroom), a PhD dissertation in educational technology conducted in Northern Illinois university ,year 2003, The purpose of this study was to examine early childhood educators' attitudes toward and knowledge about computers in the classroom. A usable sample of 391 participants was drawn from early childhood educators attending

two different, one-day early childhood conferences in Northern Illinois. A 24-item Likert-scaled instrument was designed to assess attitudes and knowledge items about computers in a classroom. Results indicated that early childhood educators had a neutral to positive attitude toward computers and were neutral to slightly agreeable about being knowledgeable about computers in an early childhood classroom. Early childhood educators aged 18 dash; 30 had more positive attitudes toward computer use than did those aged 41–50 years. Also, educators who used computers in their classroom had a more positive attitude toward computers and perceived themselves as more knowledgeable about computers than did those who did not use a computer in the classroom. Educators who worked in full-day daycare centers and Head Start programs had more positive attitudes toward computers and perceived themselves as more knowledgeable about computers than did those who worked in half-day preschool groups. Also, those educators who worked with children three years old and older were more aware of computer curriculum guidelines than were those educators working with children two years old and younger. Early childhood educators with more positive attitudes toward computers being used in the classroom believed that children should start using computers at a younger age. Those educators who perceived they had more knowledge about computers being used in the classroom thought children should start using computers at a younger age. Also, those educators who used computers in their classroom were more likely to think that children should start using computers at a younger age than did those educators who did not use computers in their classrooms. Additionally, educators who used computers more frequently in the classroom were more likely to believe that computers should be introduced to children at a younger age. Finally, early childhood educators believed that four years should be the age children should be introduced to computers. The findings are discussed in terms of recommendations for practical applications.

2.7.3- Herring, Jennifer Cassandra, (An investigation into the current practices of formal and informal teacher technologists on the use of computers in the classroom in an urban academy school and a private academy school) a PhD dissertation in educational technology conducted in University of Texas. year 2003 .The purpose of this study was to explore the practices of formal and informal teacher

technologists in two school settings: an elite private, high school academy and an urban poor, middle school academy. This investigation included clarifying the role of the formal and informal teacher technologist and investigating the need for both formal and informal teacher technologists. This study also explored the technological differences between the public academy middle school and the private academy high school. Two formal and eight informal teacher technologists were interviewed face-to-face three times, each using the transcendental phenomenology research design. Each teacher technologist was also observed at least once in classroom and teacher training sessions. The results of this study revealed the role of the teacher technologist was a fast technology problem solver; although students and teachers used technology, the schools lagged in adequate technology and/or teacher training; ,teacher technologists used the Internet to build and evaluate curriculum; ,most students used tool software centered around project-based activities; ,teacher technologists trained other teachers to be collaborative risk-takers in using technology; ,teacher technologists shared what they learn with students and other teachers, students could be student-learners or student-teachers and teachers could be teacher-learners. Four conclusions were reached: technology and constructivist teaching are compatible; technology is a tool, new approaches to professional development are needed, hardware and software should be standardized for maximum use. Additionally, both schools in this study were evolving the role of the formal teacher technologist. It was recommended that the schools employ at least one fulltime formal teacher technologist whose main role is to assist teachers in technology classroom incorporation, the schools form teams of informal teacher technologists, and the public middle school academy purchase one laptop for each student to use anytime, anywhere.

2.7.4- Sandig,Christine,(A matter of existence and equity: A consideration of characteristics of primary teachers in the innovative use of computers in the classroom). a Master degree thesis ,educational technology conducted in York University (Canada)year 2003. The purpose of the study is to identify innovative primary computer-using teachers in terms of personal characteristics, dimensions, and classroom practices. These aspects are then examined within Begum's conceptualization relating teachers' work with computers to a series of negotiations and delegations within and beyond the social context of the classroom. This builds upon prior research conducted on computer using teachers. Three participants from the same school board in Central Ontario, Canada were selected through recommendations based on their consistent use of computers in the classroom. An additional participant is utilized to provide a varying perspective. Finally, an expert participant was interviewed to provide definitions and background on use. Results are compared to prior research findings in terms of factors characteristic to innovative computer-using teachers. Conclusions of this

study are that (1) Innovative computer-using primary teachers delegate more and control less (inverse proportionality to other populations) (2) Innovative computer-using primary teachers have a wider range of negotiations as well as ascribe equal value to all factors involved in the negotiating of work.

2.7.5- Osuna, Marissa M. (Teacher professional development: An activity theory perspective) Year 2005 a PhD dissertation in educational technology conducted in the State University of New York in the year 2003. This descriptive multiple case study proposes that activity theory is an appropriate conceptual tool and methodology for understanding teachers' professional development. The study focused on the influence that activity systems had on teachers' goal-directed, artifact mediated activity before, during, and after attending a professional development program on integrating computers in teaching. Thus, activity systems as cultural and historical constructs integrated by subjects, mediating artifacts, objectives, rules, community, and division of labor set the ground from which to examine teachers' activity. Data gathered from six experienced English to Students of Other Languages teachers demonstrated that teacher professional development is as much suppressed or expressed to various degrees by the mediated interrelationships of the different components in the system. Furthermore, some components exerted tenacious influence in encouraging or deterring teachers' goal-mediated activity. The study's findings also suggested that different components within an activity system acted as mediators of each other to transform not only teachers' activity but also the human agents who carried it out. Search for resolutions to the inner contradictions and tensions resulting from interactions within the activity system emerged as powerful forces to drive teachers' transformation of practice and of themselves. Finally, analysis of teachers' mediated activity through time and space across activity systems added another layer for understanding how systemic contradictions influenced teachers' professional development. Implications of activity systems in curriculum, instruction, and assessment of professional development programs are discussed.

2.7.6- Wahab, Samia A. (Factors correlating with teachers' use of computers in the classroom) year 2003, a master degree thesis in educational technology conducted in DePaul University. This study examined several factors relating to the use of computers in the classroom by teachers. The factors examined in this study included teacher attitudes, emotions, beliefs and outside influences. This was done by a review of past studies, administering two surveys (demographics questionnaire and Computer Attitude Scale) and analyzing the survey data. Questionnaires were distributed to faculty at five randomly selected schools in the Chicago land area participating in the study. Data from the surveys were then examined by principle components analysis, multiple correlation and multiple regression analyses to determine which factors correlate with teacher computer use

in the classroom. This study found that a greater amount of computer experience fostered more positive attitudes towards computers. Teachers with greater years of computer experience were more comfortable with computers. The study also found that usefulness is correlated with grade level taught, teaching experience and classroom use and that computer liking is correlated with grade level taught and teaching experience. The main goal of this study was to examine the relationship between teachers' attitudes, emotions, beliefs, outside influences and teachers use of computers. The results should help administrators and teachers understand why faculty embrace or resist technology. The findings suggest that training professionals should consider many of the correlations between factors found in this study when designing professional development programs for teachers

2.7.7-Sirgany, Karen (Perceptions of technology directors to computer acquisition and usage in their Illinois rural public K--12 unit school districts) a PhD dissertation in educational technology, conducted in the Northern Illinois university. The purpose of this study was to examine the perceptions of technology directors to computer acquisition and usage in their rural Illinois K– 12 unit school districts. Technology directors completed an online survey. Professional development, accessibility of computer technology, cost of computer technology, time availability, administrative and technology department support, speed of connectivity, and student use of computer technology were eight areas covered in the research. Results showed 87% of responding schools offered staff development to teachers, which was consistent with national research, and 96% of technology directors perceived the need for staff development, which was higher than teacher perceptions based on national data from teachers. Responses of technology directors were consistent with national statistics in Internet connection with virtually every district being connected. Responses were also consistent with the ratio of students to approximately five students per computer. The majority of respondents reported T-1 connections were the main Internet connections. National figures reported fewer T-1 connections and more wireless and cable connections. National research reported 82% of teachers believed there was a lack of release time to use computers, 85% of technology directors perceived teachers needed more time to work with colleagues, and 93% thought teachers needed more time for computer technology. Data were inconsistent with national results in the area of technology support. Eighty-three percent of technology directors responded technology staff assisted teachers in integrating computers into the curriculum, but 68% of the teachers believed there was a lack of technology support regarding integration of computers into the curriculum. Ninety-four percent of respondents perceived that teachers had easy access to computer support, but 68% of teachers had concerns about technology support in usage of computers. Further inconsistency dealt with computer training being offered at convenient times. Eighty-one percent of technology directors thought computer training was offered at convenient times, but 82% of teachers were concerned with a lack of release

time. Approximately 80% of technology directors perceived teachers had the hardware and software needed for computers, but 82% of teachers thought there was an insufficient number of computers, and 58% thought there was a lack of good instructional software.

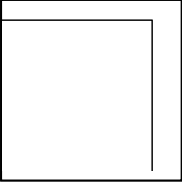
2.7.8-Berner, Erika Julia.(A study of factors that may influence faculty in selected schools of education in the Commonwealth of Virginia to adopt computers in the classroom) a PhD dissertation in educational technology in the year2002 . There is an increasing awareness in the literature concerning the lack of K-12 teachers using computers in the classroom. (This is spite of the overwhelming need for students to be computer literate in order to function in future society.) In an effort to overcome this lack of computer use on the part of K–12 teachers, the Commonwealth of Virginia along with most other states have made K–12 teacher computer training one of the top priorities in education. However, an issue that does not seem to be addressed in the literature and the states' education policies is the fact that many university/college education faculty do not use computers in their classrooms. Thus giving newly graduated K–12 teachers few, if any, teaching with computers educational models. What factors (predictors) must be in place for those faculty members Schools of Education to be motivated to use computers in their classrooms is the focus of this study. Through literature review, and use of Ford's Motivational Systems Theory as the conceptual framework in this study, seven possible predictors were identified and researched. The research design used in this study was causal-comparative. The subjects were faculty members from five universities located in Virginia, who responded to a survey questionnaire. Sixty-three full-time faculty members with the ranks of instructor to full professor were included in this study. Seven research questions were asked and analyzed utilizing a stepwise multiple linear regressions. The dependent variable in this study was computer use in the classroom, the MST predictor variables were: (1) There is an increasing awareness in the literature concerning the lack of K–12 teachers using computers in the classroom. (This is spite of the overwhelming need for students to be computer literate in order to function in future society.) In an effort to overcome this lack of computer use on the part of K–12 teachers, the Commonwealth of Virginia along with most other states have made K–12 teacher computer training one of the top priorities in education. However, an issue that does not seem to be addressed in the literature and the states' education policies is the fact that many university/college education faculties do not use computers in their classrooms. Thus giving newly graduated k-12 teachers few, if any, teaching with computers educational models. What factors (predictors) must be in place for those faculty members Schools of

Education to be motivated to use computers in their classrooms is the focus of this study. Through literature review, and use of Ford's Motivational Systems Theory (MST) as the conceptual framework in this study, seven possible predictors were identified and researched. The research design used in this study was causal-comparative. The subjects were faculty members from five universities located in Virginia, who responded to a survey questionnaire. Sixty-three full-time faculty members with the ranks of instructor to full professor were included in this study. Seven research questions were asked and analyzed utilizing a stepwise multiple linear regression. The dependent variable in this study was computer use in the classroom, the MST predictor variables were: (1)perceived relevance; (2)desire to learn(3)emotional reaction to technology; (4)beliefs about computer competence; (5)beliefs about technology. Two additional predictors though not included in the MST were administrative support and peer support. Additional demographic predictor variables, age, gender, and tenure were also tested against the dependent variable. The reported findings indicated that beliefs in computers (competence) were the strongest predictor, with beliefs of technology being the second. All predictors taken together showed strong predictive capabilities. Further research is recommended that will replicate this student to include a sample of faculty members from private universities, faculty from other disciplines, and faculty from larger universities. perceived relevance; (2)desire to learn; (3)emotional reaction to technology; (4)beliefs about computer competence; (5)beliefs about technology. Two additional predictors though not included in the MST were administrative support and peer support. Additional demographic predictor variables, age, gender, and tenure were also tested against the dependent variable. The reported findings indicated that beliefs in computers (competence) were the strongest predictor, with beliefs of technology being the second. All predictors taken together showed strong predictive capabilities. Further research is recommended that will replicate this student to include a sample of faculty members from private universities, faculty from other disciplines, and faculty from larger universities.

2.7.9- Wu, Yi-Tzu (A comparison of student and teacher uses of and views toward computers in the teaching of college-level English in Taiwan) (China) year 2003 , a PhD dissertation in educational technology conducted in Texas A&M University – Kingsville , The purpose of this study was to explore Freshman English teachers' and learners' beliefs toward computer use in language instruction. Two self-report questionnaires, a Teacher Survey and a Student Questionnaire, were administered to 13 Freshman English teachers and 180 students, respectively, in Changhua and Yunlin Counties in Central Taiwan. The data were analyzed by percentages. The

results showed that the majority of teachers and students had minimum computer knowledge. Word processing, e-mail, and surfing the Internet were used most often by the participants. Regarding multimedia equipment and services on campus, most teachers were not aware of them. Responses from three teachers (23.1%) indicated that they integrated computers into language instruction because they would like to make instruction more interesting, improve their teaching, and provide students chances to write more as well as use popular technology. They asked students to search for materials on the Internet, to submit assignments on line, and to communicate with others. Teachers and their students thought the computer facilitated language teaching and learning as well as motivated students to learn a language. Both computer-use and non computer-use teachers shared some beliefs toward computer use. They felt that the computer improved the quality of language instruction; however, their role would not be enhanced, but degraded. Nine out of thirteen teachers expected to integrate the computer into language instruction; however, four did not because of lack of technical support. The majority of students hoped that the computer could be incorporated into language instruction more than it was; nevertheless, they did not think the teacher could be replaced by the technology. The majority of teacher and student participants thought the teacher could be a guide mentor or a language advisor, whereas the computer could serve as a facilitator or a supplement to instruction.

2.7.10- Fontana Rosa, M. (A case study of a social studies teacher's pedagogical stance toward the use of computers as a tool for learning in a middle school) year 2002 a PhD dissertation in educational technology conducted in Kent state university. This study investigated a social studies teacher's pedagogical beliefs and practices regarding the integration of computers into his classroom lessons, examined his experiences regarding computer integration, identified factors that influenced computer usage, and provided understanding of successes and failures encountered as he integrated computers in his classroom. The study participant was a middle-age social studies teacher at a suburban middle school. Qualitative data were generated through an ethnographic single case study design using interview transcripts, observations, and the researcher's journal and were coded and grouped into specific themes. Comparison of data, a dependability audit, triangulation, and member checks were used to minimize potential bias. Results indicated that this teacher's pedagogical stance was based on his beliefs about, background in, professional development for, and experiences with computer usage. Computer integration into social studies lessons was influenced by student usage of computers to construct assignments, computer use as a response to



student behavior, and decisions by school administration involving computer usage and software programs. This study demonstrated a relationship between pedagogy and computers, and documented three patterns: (a) pedagogical strategies varied according to the teacher's knowledge and experiences regarding computer integration; (b) pedagogical strategies varied according to the teacher's familiarity with software programs; and (c) influences from students, colleagues, and school administration strongly affected pedagogical strategies for computer integration. This research indicated that this teacher's ability and knowledge of integrating computers into his social studies lessons was based on his experiences with using computers and his experiences with integrating computers into previous lessons.