

DEPARTMENT OF COMPUTER SCIENCE

**Assessment Of the Use of Computer Assisted Learning (CAL)
and Multimedia in Kuwaiti Higher Education**

Ahmed Al-hunaiyyan

Technical Report No. 294

May 1997

Assessment Of the Use of Computer Assisted Learning (CAL) and Multimedia in Kuwaiti Higher Education

Ahmed Al-hunaiyyan

Computer Science Department
Faculty of Information Sciences
University of Hertfordshire
College Lane
Hatfield
Herts AL10 9AB
Email: a.al-hunaiyyan@herts.ac.uk

Abstract

This paper presents and discusses the finding of a survey carried out in order to assess the current use of Computer Assisted Learning (CAL) and Multimedia (MM) in Kuwaiti Higher Education (HE), and to identify both areas in which such technology is thought to be needed in this context, and factors which are likely to constrain its use. Data have been collected using interviews, questionnaires, and from other documentary sources. The main objective of the survey was to provide the HE decision-maker in Kuwait with comprehensive information and provide recommendations regarding CAL and Multimedia in Kuwaiti HE.

The study shows that Kuwait HE is not employing CAL or Multimedia at present. Although a small number of teaching staff use or develop CAL and multimedia learning programmes, there is a general lack of experience in using and developing CAL and Multimedia, as well as an absence of general guidelines for designing and developing CAL and Multimedia suitable for the Kuwaiti HE environment. Teaching staff and students show interest in implementing CAL and Multimedia in their educational institutions, but they believe that some difficulties would be involved in such implementation.

Keywords Multimedia, CAL, Kuwait Higher Education

CONTENTS

- 1. Introduction**
 - 2. Method**
 - 3. Background: Higher Education System in Kuwait**
 - 3.1 Kuwait University
 - 3.2 Public Authority For Applied Education and Training (PAAET)
 - 3.3 Kuwait Institute for Scientific Research (KISR)
 - 4. Experiences with CAL and Multimedia in Kuwaiti Higher Education**
 - 4.1 Use of CAL and Multimedia at Kuwait University (KU)
 - 4.1.1 College of Engineering and Petroleum
 - 4.1.2 Faculty of Medicine
 - 4.1.3 Faculty of Islamic Studies
 - 4.1.4 College Of Education
 - 4.2 Use of Multimedia at PAAET
 - 4.3 Other Related Multimedia Projects
 - 4.3.1 KISITP Project
 - 4.3.2 USEE Project
 - 5. Current Use and Future Needs for CAL and Multimedia in Kuwait Higher Education :**
 - 5.1 Questionnaire Survey # 1 : A Survey of Teaching Staff
 - 5.2 Questionnaire Survey # 2 : A Survey of Students
 - 6. Summary of Findings and Recommendations**
 - 7. Conclusion**
 - 8. References**
- Appendix (A) List of Interviewees**
Appendix (B) Sample of Teaching Staff Questionnaire
Appendix (C) Sample of Student Questionnaire

Assessment Of the Use of Computer Assisted Learning (CAL) and Multimedia in Kuwaiti Higher Education

1. Introduction

The need for increasing the efficiency and quality of the Higher Education (HE) system in Kuwait led the education authorities there to think about, and plan for, integrating CAL and Multimedia, as a supplementary tool, into the development and enhancement of teaching and learning processes. This paper presents the results of a survey carried out in order to assess the current use of, and future needs for, Computer Assisted Learning (CAL) and Multimedia (MM) in Kuwaiti Higher Education (HE).

The structure of this paper is as follows: The next section describes the method used in this study. Section 3 presents a background of the general structure of the Higher Education system in Kuwait. Section 4 discusses experiences and previous trials of using CAL and Multimedia in Kuwait HE. Materials presented here is drawn from interviews with individuals involved in Kuwaiti HE, and from reports and documents which describe the current status of computing facilities in various institutions. Section 5 is concerned with assessing the need for CAL and Multimedia in teaching and learning in Kuwaiti HE, and is based on findings from questionnaires completed by teaching staff and students in Kuwait. Section 6 summarises findings and recommendations. Finally, conclusion is outlined in section 7.

2. Method

The study uses two methods aiming at assessing the use of CAL and Multimedia in Kuwait HE: Interviews and a questionnaire. Data were also collected from other documentary sources as reported in section 3.

1- Interviews: The first approach to gathering information involved the use of interviews. Several sets of questions were prepared to interview each relevant person. Several people from Kuwait University (KU) and The Public Authority For Applied Education and Training (PAAET) were interviewed representing: Information Centres, Educational Technology Centres, academics and teaching staff. Others were also interviewed from the Kuwait Ministries of Education and Higher Education, the Cairo office of UNESCO, and "Sakhr", a leading developer of Arabic Multimedia Educational Programmes.

For each interview, the interviewee was telephoned to arrange a time and date for the interview and to briefly explain its purpose. At the time arranged, the interviewer visited the interviewee on his/her site. Interviews typically lasted between thirty minutes and one hour. After every meeting, the interviewer wrote down and summarised the results of the meeting. For more details about Interviews and interviewees, readers can refer to (Appendix A).

2- Questionnaires: The second approach to gathering information involved the use of a questionnaire. Two questionnaires were designed, one for teaching staff, and the other for HE students in Kuwait. The objective in each case was to seek the respondents' subjective opinions about the use of, and need for, CAL and Multimedia in their academic institutions.

Questionnaire #1: Teaching staff: From the teaching staff who received a questionnaire, only 116 out of 520 have replied. The 520 questionnaires were given to teaching staff by the secretary of each selected academic department in most of the colleges and faculties in Kuwait University and PAAET. Questionnaires were collected from the academic departments after two weeks. Although, the questionnaire contains 25 questions, several questions had to be excluded in the analysis presented in this paper. This was due to the fact that some questions represented general information or areas not relevant to multimedia in higher education. Consequently, only 12 questions are considered in the questionnaire analysis. Analysis and results of the survey are presented in section 5 of this paper. For more details about teaching staff questionnaire, readers can refer to (Appendix B).

Questionnaire # 2: Students: Among the students, from Kuwait University and PAAET, who received a questionnaire, 284 out of 520 have responded. Some of the questionnaires were given to students in the classrooms in each selected college. Students then were given 10 to 15 minutes to fill in the questionnaire. Other questionnaires were distributed to students in various colleges and faculties where students were simply asked to fill them in and return them back to the registration office in their college and faculty. As for questionnaire # 1, several questions have been excluded from the analysis presented here because they represent areas not relevant to multimedia in higher education. So, only 4 out of the 12 questions in the questionnaire are considered here. Analysis and results of this survey are also presented in section 5 of this paper. For more details about student questionnaire, readers can refer to (Appendix C).

3. Background: Higher Education System in Kuwait

The higher education system in Kuwait consists of three major institutions, namely: Kuwait University (KU), The Public Authority For Applied Education And Training (PAAET), and Kuwait Institute For Scientific Research (KISR). This section provides the reader with basic information about the higher education system in Kuwait with special emphasis on KU and PAAET.

3.1 Kuwait University (KU)

Kuwait University was established in October 1966. At its inception, the university consisted of only two colleges: the college of Science, Arts and Education and the Women's College. It opened with a student body of 418 and a teaching staff of 31. Today, the university has 8 colleges, 2 faculties and the residential Women's College, see table 1. The student body numbers over 18,000 and there are more than 1,342 teaching staff (Kuwait University Catalogue, 1995/1997).

Kuwait University operates on the course unit semester basis. To fulfil their concurrent teaching and academic advising duties, all faculty members are expected to be fully conversant with the basic components of the university system, rules and regulations. Faculty members should also be familiar with the auxiliary services and units of Kuwait University. These include the Language Centre, the Centre of Computer Services, the Academic Development Centre, university libraries and university-sponsored publications.

Table (1) : Faculties & Colleges of Kuwait University

College / Faculty	Established	Departments	Type of Study / Services
1. College of Arts	1966	<ul style="list-style-type: none"> • Arabic language and literature. • English and literature. • Geography. • History. • Mass Media. • Philosophy. • Psychology. • Sociology & Social work. 	Undergraduate Studies.
2. College of Science	1966	<ul style="list-style-type: none"> • Botany and Microbiology. • Chemistry. • Geology. • Mathematics & Computer Science. • Physics. • Statistics and Operations Research. • Zoology. 	<p>It's mission is to supervise and support the planning, Institution and development of graduate studies at Kuwait University.</p> <p>Undergraduate studies.</p>
3. Women's College	1966		Offers courses in science, Arts and Education only for girls.
4. College of Islamic Studies	1967	<ul style="list-style-type: none"> • Comparative Jurisprudence & policy of Sharia. (Islamic Law) • Hadeeth (The Prophet saying and doing) • Jurisprudence & Principles of Jurisprudence. • Quranic Interpretation & Prophetic Tradition. 	Undergraduate Studies.
5. College of Law	1967	<ul style="list-style-type: none"> • International Law. • Penal Law. • Private Law. • Public Law. 	Undergraduate Studies.
6. College of Engineering and Petroleum	1975	<ul style="list-style-type: none"> • Chemical Engineering. • Civil Engineering. • Electrical & Computer Engineering. • Mechanical Engineering. • Petroleum Engineering. 	Undergraduate Studies.
7. Faculty of Medicine	1976/77	<ul style="list-style-type: none"> • Biochemistry. • Community Medicine & Behavioural Science. • English & Medical Study Skills. • Human Morphology and Experimental Pathology. • Medicine. •Microbiology • Nuclear Medicine. • Obstetrics and Gynaecology. • Organ Transplantation. • Pathology. • Paediatrics • Pharmacology. • Physiology • Primary Care. • Psychiatry. • Surgery. • x-ray. 	Undergraduate Studies.

Table (1) : Faculties & Colleges of Kuwait University (contd.)

College / Faculty	Established	Departments	Type of Study / Services
8. College of Graduate Studies	1977		It's mission is to supervise and support the planning, initiation and development of graduate studies Kuwait University. It offers Masters Degree in the following subjects: <ul style="list-style-type: none"> • Arts, Education, Engineering, Law, Medicine, Science, and Sharia.
9. College of Education	September, 1980	<ul style="list-style-type: none"> • Curriculum and Instruction. • Educational Administration. • Educational Foundations. • Educational Psychology. 	Undergraduate Studies.
10. Faculty of Applied Health Sciences and Nursing	June, 1982	<ul style="list-style-type: none"> • Health Information Administration. • Medical Laboratory Administration • Nursing. • Physical Therapy. • Radiological Sciences. 	Undergraduate Studies.
11. College of Administration Sciences.	May, 1995	<ul style="list-style-type: none"> • Finance and Financial Institution. • Management and Marketing. • Quantitative Methods and MIS. • Economics. • Accounting. • Public Administration. 	Offers consultation services, research, and training courses to the government bodies, or other organisations. Undergraduate studies

The language of instruction in most colleges is Arabic. Exceptions are in colleges of Science, Engineering and Petroleum, Medicine, and Nursing where English is a medium. English is also the language of instruction in the College of Graduate Studies.

The Computer Services Centre was originally established in 1971 with the installation of NCR Century 151 and IBM 3780 RBT. It rapidly expanded into a major computing facility leading to the acquisition of UNIVAC-1100/62 Mainframe System and several VAX-11/780 computers in the early 1980's. Services were upgraded through acquisition of new hardware and software. Prior to the Iraqi invasion of Kuwait, August, 1990. Kuwait University Computer Services (KUCS) had several mainframe systems. The IBM- 4381 model 14 was installed in 1986 and was mainly used for administrative applications such as Student Information Systems, Financial Systems, Payroll & Personnel etc. Academic and Scientific Applications were supported by a group of VAX systems viz. 8820, 8810, 11/785. A new VAX-6000/420 with two Victor Processors was under installation just before the invasion. UNIVAC-1100/62 was in service from 1981. Later it was upgraded to model 1100/72. Initially, it was used for administrative as well as academic applications.

In 1987, KUCS started migrating Administrative Applications from UNIVAC to IBM Mainframe. There were around 250 terminals installed with IBM-4381 and during March/April 1990, it was felt that KU needed another Mainframe System like IBM-3090 model 150 JH. Scientific and Academic User's Files were transferred from UNIVAC to VAX Systems. The migration of all user's files from UNIVAC to VAX completed in June/July 1990, a month before the Iraqi invasion of Kuwait.

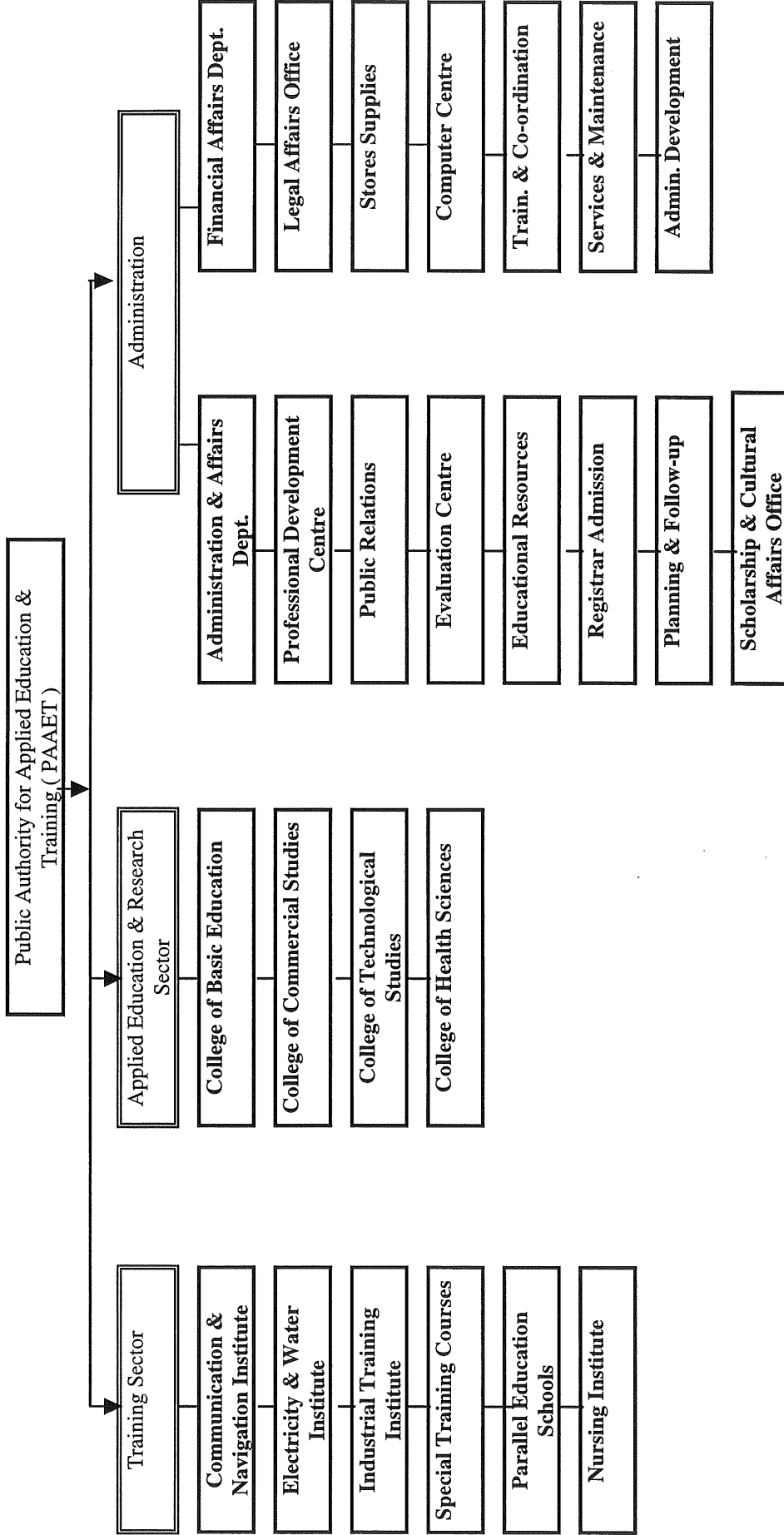
Due to the August 2nd, 1990, Iraqi Invasion of Kuwait, KUCS lost all of its Computer Facilities-Mainframes, Mini-Systems and Personal Computers. Computer sites were left totally destroyed. However backup tapes of various applications were saved. KUCS serves educational, research and administrative needs of the University community. After the Liberation, continuing on the same lines as before the Invasion, KUCS chose IBM-ES-1921/440 Mainframe and VAX-9000/420 VP super Mainframe to replace the earlier equipment lost during the invasion. In January 1992, a VAX-9000/420 VP super Mainframe was installed to support academic computing and to provide super computing facilities for scientific and engineering research projects with the University. The model 420 VP has two powerful scalar processors and two vector processors giving tremendous computing power when combined with appropriate software. A large number of specialised software products and libraries covering a wide variety of Scientific, Statistical and Engineering applications are installed to take advantage of the parallel and vector processing capabilities of the system. In general, there are more than 3168 computers and 1148 printers in Kuwait University distributed in colleges, faculties and other administration and educational centres. Students from all of the colleges have access to computer facilities as well as access to the Internet.

3.2 Public Authority For Applied Education And Training (PAAET)

The roots of applied education and training date back to more than half a century, to the start of oil exploration, production and exportation activities. Companies operating in this field organised training programmes to prepare a national trained labour force. Due to the increase in the demand for labour in general, and the country's desire to create national cadres, it established these institutions to provide the country with a well-qualified labour force.

The development of technical and vocational education on one hand, and of training on the other, continued until the state felt the necessity of establishing an independent centralised authority to supervise its output and plan its programme. As a result, the Public Authority For Applied Education and Training (PAAET) was established in December 1982 to fulfil this objective. According to the law of its establishment, PAAET is comprised of two sectors: The Applied Education Sector which consists of four colleges: The College Of Basic Education; College of Technical studies; College of Commercial Studies; and College of Health Sciences, and the Training Sector which consists of: the Telecommunication and Navigation Institute; Industrial Training Institute; Electricity and Water Institute; Nursing Institute; and Parallel Education, see figure 1. PAAET now belongs to the Ministry Of Higher Education (PAAET Achievements, 1995/1996).

Figure (1) : General Structure of (PAAET)



The computer and information Centre is responsible for providing hardware and software needed for the colleges and institutes, as well as PAAET administration. The centre is also responsible for developing computerised information systems, setting up networks wherever needed in the Authority. Teaching staff have access to the Internet, but students don't. The College of Technical Studies however, provides an Internet access only to honour students. Each college and institute has its own computer facilities. Computer facilities vary in each college depending on the number of students enrolled as well as the college's areas of specialisation. For instance, The College of Health Sciences is equipped with only two computer labs, while The College of Commercial Studies is equipped with more than 12 computer lab, each lab consists of 20 PC, simply because the Computer Science Department is placed in the College of Commercial Studies, as well as, the large number of students enrolled.

There are over 1,794 computers (IBM's, DELL, NCR, COMPAQ, MAC-LC, MAC- Quadra 700,800,950, NOKIA, SUN SPARC, SUN SPARC STATION , Micron P 75 etc.), and over 485 printers of different ranges and types from Lasers to Dot Matrix in the Authority. These computers are used for administrative support in the various sectors of the authority. Computers are also placed in the laboratories of the colleges and institutes in which they are used for teaching computer programming and various computer applications. Computer laboratories are also utilised for training people from governmental institutions, and for community services courses. Table 2 gives brief statistics on the computers in PAAET distributed in colleges, faculties and other administrations and centres.

Table (2): Number of Computers in PAAET

College/Institute	Boys Campus	Girls Campus	Total No. of Computers
College of Commercial Studies	183	197	380
College of Basic Education	78	88	166
College of Health Sciences	30	126	156
College of Technical Studies			152
Telecommunication Institute			182
Industrial Training Institute			78
Electricity and Water Institute			40
Parallel Schools			32
Other Administrative Department (registration, financial, Training, legal affairs, planning, Scholarship, services, staff development, Library, engineering, Public relation, computer centre, development, etc.)			608
Total			1794

Activities and Functions of the Authority

The activities and functions of the Authority can be classified into the following three main aspects:

1- The major activity of the Authority consists of offering applied education and training programmes, with differing inputs, outputs and duration according to the purpose of each. It is divided into two main sections:

a- Applied education programme offered by the four colleges of the Authority and supervised by the applied education sector.

b- Various and diversified training programme supervised by the training sector.

2- Administrative, financial, and service activities aimed at servicing the activities of the Authority (Applied Education and Training), and providing a suitable environment and the necessary potential.

3- Ancillary activities aimed at providing an appropriate academic environment, raising the efficiency of educational and training operation, and strengthening the link between the labour market, and institutions of society related to the main activity of the authority, such as applied research activity, vocational development programme for the teaching and training staff as well as other activities and functions.

3.3 Kuwait Institute For Scientific Research (KISR)

Kuwait Institute For Scientific Research (KISR) was established in February 1967 by the Arabian Oil Company Limited (Japan) in fulfilment of its obligations under the oil concession agreement with the Government of The State Of Kuwait. The Institute was established to carry out applied scientific research in three fields: Petroleum, desert agriculture and marine biology.

KISR was reorganised by an Amiri Decree issued in July 1973, under which it became directly responsible, via its Board of Trustees, to the Council of Ministers. The main objectives of the Institute, as specified in the Amiri Decree, were to carry out applied scientific research, especially relating to industry, energy, agriculture and the national economy, to contribute to the economic and social development of the state of Kuwait and to advise the Government on the country's scientific research policy.

An Amiri Decree in 1981, formally established KISR as an independent public institution. The revised objectives of the Institute remain to carry out applied scientific research that helps the advancement of national industry and to undertake studies relating to the preservation of the environment, resources of natural wealth and their discovery, sources of water and energy, methods of agricultural exploitation and promotion of water wealth. The law entrusted the Institute with undertaking research and scientific and technological consultations for both governmental and private institutions in Kuwait, the Gulf region and the Arab world.

4. Experiences with CAL and Multimedia in Kuwaiti Higher Education

The aim of this section is to survey the previous studies and trials at using or implementing CAL and Multimedia at Kuwait Higher Education. The information presented here was collected in interviews as described in section 2.

4.1 Use of CAL and Multimedia at Kuwait University (KU)

Although Kuwait University has succeeded in teaching both students and trainees from governmental and other sectors in the form of training seminars or community services about computer applications and programming, it has not introduced any courses or training about authoring CAL and Multimedia teaching and learning programmes. Few individual teaching staff are incorporating CAL and multimedia learning programmes into their courses. However, Libraries in some colleges have some Multimedia CD-ROM Titles for students use. Students also have an access to the Internet and other general-purpose computer facilities.

There are some serious attempts for using and introducing CAL and Multimedia in some Faculties and colleges in KU. These are summarised as follows:

College of Engineering and Petroleum

In an interview with the Dean's College and the Dean's Assistant, the College is in the process of establishing a laboratory for Multimedia Applications In Engineering Instruction (MAIEI). Al-Mutawa, a teaching staff, emphasised the importance of using Computer Assisted Learning and Multimedia Applications as an essential aid for simplifying engineering education. She introduced some recommendations regarding the establishment of a multimedia laboratory. She advised planners to differentiate between multimedia development systems and multimedia delivery systems in terms of hardware and software requirements. She also suggested to emphasise on in house multimedia courseware development, due to the limited availability of commercial courseware. When developing in house multimedia courseware, first, she believed that the multimedia laboratory must be staffed with experienced personnel. Second, each college must follow a clear and motivating incentive policy to encourage teaching staff to contribute to multimedia courseware development. She also introduced some recommendations related to the organisational structure and management issues when establishing a multimedia laboratory (Al-Mutawa, 1995).

The Committee which was assigned to produce a report for establishing the laboratory for Multimedia Applications In Engineering Instruction (MAIEI) for the College of Engineering has considered the recommendations presented by Dr. Al-Mutawa, and has included the following objectives:

- 1- To develop new multimedia applications and courseware that will enhance the education process in Kuwait University and the community at large.
- 2- To provide access to the latest multimedia applications and courseware developed and tested outside the lab.
- 3- To establish a suitable environment for delivering high quality multimedia presentations and lectures.
- 4- To inform the faculty members through seminars and workshops about the latest developments in the applications of multimedia in engineering education.
- 5- To encourage the faculty members to use and develop multimedia courseware and apply an incentive policy.

- 6- To arrange with the college of engineering librarian to establish a repository of ready to use multimedia applications, courseware, video tapes, and electronic books (CD-ROM Format).
- 7- To approach the private sector and the community at large regarding the lab potential and expertise in developing multimedia documents for various applications.

Faculty of Medicine

Some teaching staff are currently using some of the multimedia learning programs (CD-ROM format) to teach various topics in medical sciences. Although there is no multimedia lab in the Faculty at present, teaching staff are showing a positive attitude toward the use of such technology for their teaching. This positive attitude due to the following two main reasons:

- 1- The availability of a varied, Interactive commercial multimedia CD-ROM Titles covering a wide topics in the area of Medical sciences.
- 2- Unlike other colleges and faculties, the Faculty has its own computer and information centre which support and provide hardware and software needs for such implementation. Staff may get some help from the centre in authoring and using multimedia applications.

Faculty of Islamic Studies

There is an attempt by the Dean's Assistant of Islamic Studies Faculty to use multimedia in teaching Islamic subjects. He is currently using an Islamic software entitled "*Hadeeth*" developed by "Sakhr" software company. He find it very valuable source and aid for teaching. He is looking into using more packages and urging other teaching staff in using such technology in their teaching. Lack of computer hardware and Lack of knowledge about using computers among staff is an obstacle for such implementation at present.

College Of Education

Some teaching staff from the educational technology department are interested in the use of multimedia in the classroom. Two multimedia lab, Power Mac and IBM P75, are in operational use at present. They are used at present, in teaching college students introductory computer courses, introducing some computer applications (e.g. Word processing, Spreadsheets). PowerPoint is also taught to familiarise students with the use of such presentation tool for education.

Currently, there is no utilisation for the multimedia labs in the college. Multimedia titles are neither presented nor multimedia educational programmes are developed. Although there is an authoring machine in the college, neither teaching staff nor other members of staff attempted to develop multimedia educational programmes. This is due to the lack of experience, lack of incentives, lack of time, and lack of support.

4.2 Use of CAL and Multimedia at PAAET

At present, there is no implementation or use of CAL and Multimedia in teaching and learning within PAAET. The Director of Computer and Information Centre has stated "*There is no multimedia laboratory in PAAET. Very few multimedia authoring packages are available in PAAET, and no one is experienced in using authoring tools for developing multimedia educational programmes*". There is a lack of real experience in PAAET with regard to adopting CAL and Multimedia (Al-Muraifea, 1993), consequently very few individual teachers use multimedia to present learning materials to students in the classroom, however there is a trend towards establishing multimedia labs and provision of multimedia software in the future.

PAAET has succeeded in teaching both students and trainees about computer applications, but it has not yet introduced CAL and Multimedia in teaching and learning (Al-Muraifea, 1993). In an interview with the Director of Computer and Information Centre, it was learnt that the Centre has proposed a project entitled "Learning and Training by Computer" in 1985, but that the project had been hindered by technical and managerial issues.

Another attempt was initiated by the Professional Development Centre in 1989. The centre introduced five "InfoWindow" machines which are PC based systems attached to a Sony video disc and a touch screen, using ready-made interactive multimedia training programmes. Initially it was used for training staff members using a self-study approach on various educational subjects as well as some computer applications. However, because of the Iraqi invasion of Kuwait in August 1990, it was not then possible to develop this technology or to evaluate its use.

As a result of several meetings with Director of computer and information centre, Director of Educational Technology centre, staff in educational technology department, staff in computer science and information systems department and the researcher's investigation, some findings are summarised as follows:

1. Neither CAL programmes nor Multimedia learning programmes are used in wide-campus bases.
2. There is no setting for multimedia laboratory at present, attempts to set such labs are in a process.
3. There is a lack of experience in developing CAL and multimedia educational programmes among the computer centre staff and among other teaching staff in PAAET.
4. Although there are very few authoring packages such as Authorware which is installed in some authoring machines, still no variety of authoring software available and other multimedia editing tools for authoring multimedia and CAL programmes.
5. Although the Educational technology centre is equipped with the latest educational technology materials and can provide the teaching staff with a variety of tools such as (overhead projectors, slide projectors, educational films, Electronic board, etc.), staff are not encouraged into developing their learning materials. They seem to be interested in only using the overhead projectors amongst other educational media.
6. The computer and information centre is serving most of the PAAET's departments, colleges, and institutes. It may be very difficult at present to undertake additional duties such as developing any multimedia educational programme with its present capacity and lack of experience in authoring. In general, there is a positive attitude towards the use of multimedia and CAL in PAAET.

4.3 Other Related CAL and Multimedia Projects

4.3.1 KISITP Project

The Kuwaiti Educational System consists of four stages: Primary, Intermediate, Secondary, and Higher Education. The Kuwait Intermediate School Information Technology Project KISITP is sponsored by the Ministry of Education in order to introduce computers as a new medium for learning and to accomplish one of the stated educational goals for Kuwaiti students from the intermediate and other school levels (Ministry of Education, 1976). It aims at enhancing the learning process. In an interview, the project chairperson gave a history of the project and the future plan of implementation. Such project is a good start for Kuwait education. It will increase students and teachers' awareness toward the use of computers in education, and introduce the basic concepts of information technology. This awareness will create a strong need for looking into the wide use of computers in their higher education stage. This may encourage planners in the HE to consider the full implementation of CAL and Multimedia.

4.3.2 USEE Project

Upgrading Science and Engineering Education (USEE) is a special programme launched, managed and partly funded by UNESCO Regional Office in Cairo, with generous co-funding from a number of regional and international organisations. It is designed to assist science and engineering departments and faculties in Arab Universities in upgrading the efficiency and quality of their undergraduate teaching programme through intensive and dynamic use of multimedia and networking technologies. The long term objectives of the USEE project includes the following:

- 1-To assist Arab Universities (including Kuwait), on pilot scale, in acquiring the skills and knowledge required for mastering and using the new computer multimedia and networking technologies and integrating such technologies into science and engineering courses and curricula.
- 2-To assist Arab Universities in using the new information technologies in reforming and upgrading the current traditional programme of science and engineering education and training information and media-skilled science and engineering graduates.
- 3-To assist Arab Universities in disseminating knowledge, awareness and know-how, in collaboration with the public and private sector, on the potential applications of information technology for all levels of education.

USEE offers the following four support modules to Arab science and engineering departments and faculties:

a- Project Grant Awards for Pilot Course Development

The scheme aims at pilot development of a representative number of lower division foundation courses in science and engineering through the use of internationally developed multimedia (Hypertext) courseware and computerised methods of course delivery.

b- Consultancy Support for Multimedia Activities

The aim of this scheme is to provide technical advisory assistance to science and engineering departments and faculties through the region in developing and implementing their own plans for importing the new information technology into their teaching programme and curricula. This could be provided either through consultancy visits by experienced international academics to Arab Universities, or through training visits by Arab faculty members to international institutions.

c- Faculty Training Workshops

Intensive workshops, of 4-5 days duration, will be organised by the programme on a semi-annual basis throughout the programme duration to assist leading science and engineering faculty in the region in acquiring the skills and knowledge needed for importing the new environments and teaching programme.

d- Regional Dissemination of Information

The programme will in principle provide assistance, within available budgets, to any effort aimed at sharing multimedia information, experiences or resources among Arab universities whether, sub-regionally or regionally.

In an interview, Dr. Amr Azzouz, Programme Specialist in Engineering Sciences, UNESCO, in Cairo, he intensively explained all issues related to the project. He suggested that implementation of multimedia should be started in teaching engineering courses in the College Of Engineering at Kuwait University. He believes that Kuwait University has a good environment for such implementation, and has contacted and urged the Dean of the College of Engineering at Kuwait University to consider such implementation.

5. Current Use and Future needs for CAL and Multimedia in Kuwait Higher Education

This section presents the findings from the survey carried out using two questionnaires described in section 2.

5.1 Questionnaire Survey #1 : A Survey of Teaching Staff

Results from the survey are summarised and analysed below. The following areas were investigated in this part of the survey:

- 1- The existence of CAL and multimedia learning programmes, and the quality of services provided by colleges in HE.
- 2- The use of such programmes by instructors as a teaching tool and by students as a self-learning tool.
- 3- The impact of using CAL and multimedia on student learning.
- 4- The need for establishing a multimedia laboratory and the difficulties associated with it as seen by staff.

The existence of CAL and Multimedia learning programmes, and the quality of services provided by colleges in HE:

Regarding the existence of CAL and multimedia learning programmes, question 10 revealed that 37.9% of staff stated that there are such programmes in their colleges, 27.6% stated that there aren't, while 34.5% did not know about the existence of such programmes. On the other hand, as we can see from table 3 in question 18, about 44.8% of staff agree that there is a good service provided by their colleges to support the use of CAL and Multimedia, while 51.2% of staff think that there is a poor support.

The use of CAL and Multimedia by instructors and students:

As shown in table 4, responses to question 14 indicate that 72.4% of staff do not use computers to present their learning materials in the classroom, 8.6% of the staff use it frequently or always, while 18.9% use it rarely or sometimes. Responses to question 15, in table 4, indicate that 63.8% of staff think that students do not use CAL and Multimedia related to their courses, 6.8% of the students use it frequently or always, while 29.3% think students use it rarely or sometimes. Question 21, as shown in table 3 shows that 77.6% of staff would urge their students to use CAL and Multimedia programmes related to their course content if such materials were available.

The impact of using CAL and Multimedia on student learning:

As shown in question 19 in table 3, 89.6% of teaching staff agree to at least some extent that multimedia learning programmes enhance students' learning, while only 8.6% disagree.

The need for establishing Multimedia laboratories and the difficulties associated with it:

Question 20 shows that 94.9% of teaching staff support the idea of establishing a Multimedia Educational Laboratory in their colleges. Staff responses to question 22, show that 96.6% of teaching staff would like to be trained on using and developing their own CAL and multimedia learning programmes. See table 3 for details on question 20 and 22. Regarding the difficulties for establishing a Multimedia Educational Lab, the staff chose the following reasons from a list of alternatives presented in the questionnaire:

<i>Administrative difficulties</i>	21.5%	<i>Financial Difficulties</i>	38.7%
<i>Lack of Expertise in this field</i>	29%	<i>staff don't support such idea</i>	10.8%

Some staff mentioned the following reasons as an additional difficulties for establishing Multimedia Educational Labs:

- *Some staff and administration are not aware of the benefit of such technology.*
- *Students are not fully experienced in using computers.*
- *Lack of educational Arabic CAL and Multimedia Programmes.*
- *Lack of educational programmes that accommodate existing courses in Kuwaiti HE.*
- *Resistance to the new technology by staff and difficulties of adaptation and change.*

Table (3): Summary of responses to questions in questionnaire # 1

<i>Question</i>	<i>Distribution of Answers</i>						
	Totally Agree	Agree	Weak Agree	Don't Know	Disagree	Totally Disagree	Total
Q 18 : Do you think that there is a good services and support for facilitating the use of CAL in your college? No. (persons) Ratio (%)	0 0%	26 22.4%	26 22.4%	18 15.5%	28 24.2%	18 15.5%	116 100%
Q19 : Do you think that CAL and MM Enhance students' learning experience? No. (Persons) Ratio (%)	24 20.7%	60 51.7%	20 17.2%	2 1.7%	6 5.2%	4 3.4%	116 100%
Q20 : Would you like to see a multimedia computer educational unit in your college? No. (Persons) Ratio (%)	32 27.6%	62 53.5%	16 13.8%	0 0%	6 5.1%	0 0%	116 100%
Q21 : Would you urge your students to use MM comp. educational programmes related to your course content? No. (Persons) Ratio (%)	32 27.6%	58 50%	22 19%	2 1.7%	2 1.7%	0 0%	116 100%
Q22 : Would you like to learn how to use and develop multimedia edu. programmes for your lectures? No. (Persons) Ratio (%)	32 27.6%	64 55.2%	16 13.8%	2 1.7%	2 1.7%	0 0%	116 100%

Table (4): Summary of responses to questions in questionnaire # 1 (contd.)

<i>Question</i>	<i>Distribution of Answers</i>						
	100 %	75 - 99 %	50 - 74 %	25 - 49 %	1 - 24 %	0 %	Total
Q14 : How often have you used any computer educational programmes or tutorials as a presentation tool ? No. (persons) Percentage (%)	4 3.4%	6 5.2%	2 1.7%	2 1.7%	18 15.5%	84 72.4%	116 100%
Q15 : How Often do your students use computer educational programmes or tutorials which is related to the course content ? (as seen by teaching staff): No. (persons) Percentage (%)	4 3.4%	4 3.4%	2 1.7%	8 6.9%	24 20.7%	74 63.8%	116 100%

Additional Comments:

As question 25 seeks staffs' additional comments concerning the use of CAL and Multimedia, some teaching staff stated the followings:

- * *Do not neglect the role of the teacher and the importance of student-teacher interaction.*
- * *The need for Intensive training for both staff and students in HE on the use of computers.*
- * *Provide big spaces for computer laboratories in the colleges.*
- * *Academic Departments need to be aware of multimedia and its uses in education.*

- * *Multimedia programmes help students with learning difficulties.*
- * *Multimedia in HE is still in its infancy even in the western countries.*
- * *Multimedia should be applied for students in child education rather than in HE.*

5.2 Questionnaire Survey # 2 : A Survey of Students

The following areas were investigated in this part of the survey:

- 1- Students' use of CAL and Multimedia learning programmes in HE in Kuwait.
- 2- The use of such programmes by instructors as a teaching tool in the classroom (As seen by students).
- 3- The impact of using CAL and multimedia on students' learning.

Results from the survey are summarised and analysed below:

As shown in table 5, responses to question 7 regarding the use of CAL and Multimedia learning programmes by instructors, show that about 19% of the instructors use CAL and multimedia educational programmes, while 14% indicate that their instructors rarely use CAL and Multimedia and 67% say that their instructors do not use these learning materials at all. Concerning the frequency of CAL and Multimedia use by students, as shown in table 6, 33% of the students use CAL and Multimedia frequently or very frequently, while 43% indicate that they do not use CAL and multimedia learning programmes.

With regard to the students degree of agreement about the role of CAL and multimedia programmes in enhancing their understanding, as in table 7, over 88% of the students agree to some extent that CAL and multimedia learning programmes enhance their understanding, while only 6.3% disagree. With regard to the distribution of students' responses concerning the use of the Internet for their learning, as shown in table 8, about 21.1% of students use the Internet for their learning, while 73.3% do not use the Internet, and 5.6% do not know about it. Most of the students using the Internet are from Kuwait University, simply because they have an access to the Internet. However, students from PAAET do not have an access to the Internet at present.

Table(5): Question (7): Do your instructors ever use computer educational programmes or tutorials in the classroom or in the Computer Centre?

<i>Students' Responses</i>	<i>Distribution of Answers</i> (Percentage of instructors' use of MM)						Total
	100 %	75 - 99 %	50 - 74 %	25 - 49 %	1 - 24 %	0 %	
No. (persons)	12	20	8	14	40	190	284
Percentage (%)	4.2%	7.1%	2.8%	4.9%	14.1%	66.9%	100%

Table(6): Question (9): How Frequent do you use any computer educational programmes or tutorials?

<i>Students' Responses</i>	<i>Distribution of Answers</i>						Total
	Very Frequent	Frequent	Fair	Don't Know	No Use	No use at All	
No. (persons)	20	74	66	32	42	50	284
Percentage (%)	7.0%	26.0%	23.3%	11.3%	14.8%	17.6%	100%

Table(7): Question (10): Do you agree that using computer tutorials help you to better understand your lectures?

<i>Students' Responses</i>	<i>Distribution of Answers</i>						
	Totally Agree	Agree	Weak Agree	Don't Know	Disagree	Totally Disagree	Total
No. (persons)	64	142	45	17	10	6	284
Percentage (%)	22.5%	50.0%	15.5%	5.8%	4.2%	2.1%	100%

Table(8): Question (11): Do you use the Internet and WWW to get Information for your studies?

<i>Students' Responses</i>	<i>Distribution of Answers</i>						
	Very Frequent	Frequent	Fair	Don't Know	No Use	No use at All	Total
No. (persons)	14	32	14	16	58	150	284
Percentage (%)	4.9%	11.3%	4.9%	5.6%	20.5%	52.8%	100%

6. Summary of findings and Recommendation:

Given the situation described in the previous sections, it is the researcher's opinion that the following issues should be realised and considered in the development of a comprehensive CAL and Multimedia Learning Materials applicable to the Kuwaiti HE:

- 1- Kuwait HE is not currently employing CAL or Multimedia at the various colleges. There is an absence of general guidelines for designing and developing CAL and multimedia learning programmes suitable for the Kuwaiti HE environment. Instructional technology departments and computer science & information system departments in HE should give CAL and Multimedia a priority for implementation.
- 2- There is a general agreement among teaching staff about the importance of integrating computer technology into the courses in HE colleges, but staff in these colleges need more training and up-to-date awareness about CAL and Multimedia and its wide effectiveness in teaching and learning. This could be provided through seminars, training programs, newsletters, and other sources.
- 3- There is a large number of computers in KU and PAAET (over 5000 of various types). This would help if planners consider these resources for implementing CAL and Multimedia.
- 4- Although few technical and teaching staff seem to be experienced in using and developing CAL and multimedia learning programmes, there is a lack of experience in using and developing CAL and Multimedia in Kuwait HE.
- 5- Available statistics on Kuwait HE show that most colleges have a continuing increase in student number as well as class size (Al-Muzaiel, 1990). These factors should be taken into consideration before implementing CAL and multimedia laboratories.
- 6- It is difficult to use ready-made CD-ROM Multimedia Courseware designed for western students, because of the difference in the language, culture, type of learner, need for use, and type of course. Arabic multimedia educational software developers such as "*Sakhr Software*" are developing a number of CAL and multimedia educational products for individual Arab users, and incorporating multimedia with Arab intermediate and secondary school curriculum's. This may encourage other Arabic software developers to contribute to education and to introduce CAL and Multimedia to the public, which will, in turn, create the awareness needed for Kuwaitis in general.

- 7- There is at present a high level of awareness among leading educational institutions around the world about the use and implementation of CAL and Multimedia. Decision-makers in the HE system in Kuwait should make use of this.
- 8- The need for better teaching quality and better ways for delivering information leading to a better education are stated educational goals in Kuwait HE (Ministry of Education, 1976), CAL and multimedia technology could help in this.
- 9- The availability of low-cost industry standard computer technology for educational purposes makes acquiring technology a possibility for HE in Kuwait.
- 10- Staff in Kuwait HE must be informed of the role of CAL and Multimedia and how it is used in education.
- 11- The role of teachers is essential in the learning process, so the use of CAL and Multimedia should not replace teachers, but rather, assist them in their teaching.
- 12- CAL and Multimedia are not an easy solution to all our teaching problems. They can be used as a very powerful and flexible tool (Longstaffe, 1995). Therefore, adapting such technology requires an understanding of the educational need, and requires tremendous effort for designing, developing and evaluating such programmes. Al-Muzaiel states that integrating computers into the Kuwaiti educational system needs an enormous plan, and requires strong support from administration, computer scientists, educational technologists, teachers, educators and students from all Kuwaiti educational institutions (Al-Muzaiel, 1990).
- 13- Teaching staff who participate in the selection, production and implementation of CAL and Multimedia should be rewarded for such contribution.
- 14- Before establishing a multimedia environment, we should carefully consider the hardware and software requirements for every college and technical institute, in addition to developing general guidelines for multimedia courseware development.
- 15- Developing multimedia courseware suitable for the Kuwaiti environment needs us to explicitly define the educational needs for each college and institute in Kuwait HE, based on the type of course, type of learner, and requires tremendous effort for design, implementation and evaluation of such programmes.
- 16- Understanding the role and effectiveness of CAL and Multimedia in education should not let us forget its drawbacks in Kuwait HE such as:
 - a- The high cost of hardware and software and the authoring environment.
 - b- The difficulties in the migration from the old teaching practices to the new ones.
 - c- Problems related to software and courseware development.
 - d- The choice of the appropriate learning strategies for any learning environment.
 - e- The Lack of CAL and Multimedia Arabic products (Palmer, 1995).

7. Conclusion

In conclusion, most of teaching staff and students in Kuwait HE support the use of CAL and Multimedia as a teaching and learning tool in their colleges and institutes. There is currently no campus-wide implementation of CAL and Multimedia in Kuwait HE, however, CAL and Multimedia has been recognised by educators in Kuwait HE and some departmental and individual attempts with its use have been carried out since 1985. Serious attempts to establish Multimedia Development Laboratories are in process in Kuwait University.

Findings and recommendations are summarised in this report to help Decision-makers in the Kuwaiti Higher Education System in considering all issues related to the implementation of CAL and Multimedia.

8. References

Al-Muraifea, Khaled. Employee training programme of the PAAET in Kuwait: an evaluation of current activities and assessment of future needs. PhD. thesis. University of Hull. May, 1993.

Al-Muzaiel, Wafaa Sultan. Computers and Education With Special Reference To The Educational System In Kuwait. M.A. Dissertation. University Of Exeter. September, 1990.

Al-Mutawa, Souhaila. The status of Application of Computer Aided Instruction and Multimedia Tools in Engineering Colleges in the United States. Technical report. College of Engineering. and Petroleum, Kuwait University, March 1995.

Kuwait University . General Undergraduate Catalogue. 1995-1997.

Longstaffe, J.A., Whittlestone. K.D., Edwards, J. D., Williams, H., Hammond, P.M. Supporting Learning Technology in Higher Education. 1995. ITTI, University of Bristol.

Ministry of Education. General Educational Goals For The State Of Kuwait. 1976.

Palmer, Janet J. (1995). Multimedia for Higher Education in Business: Benefits and Challenges. In: Role of Computers in Business Education and its Impact on the Business Environment: Proceedings of International Conference, Faculty of Economics & Administrative Sciences, United Arab Emirates University, Al Ain, U.A.E. October 12.1995.

Public Authority For Applied Education And Training (PAAET). Achievement. 2nd Edition. 1995/1996.

Appendix (A)

List Of Interviewees

Name: *Jassim Al-Maraghi*

Job Title: *Director/ Computer and Information Centre/ PAAET.*

Date of Meeting: *Wednesday, 15th of Jan, 1997.*

Place of Meeting: *Comp. & Info. Centre/ Director Office*

General Issues Discussed: *The existence of Multimedia Labs, Hardware and Software in PAAET. The use of Internet and Multimedia for learning. Future plans for the use of multimedia.*

Name: *Fouad Mohareb*

Job Title: *Head Department/ Educational Technology Dept./ PAAET Head Office.*

Date of Meeting: *Saturday, 18th of Jan, 1997.*

Place of Meeting: *Edu. Tech. Department / Head Dept. Office/ PAAET Head Office.*

General Issues Discussed: *The use of Educational Media in general and the use of Multimedia in education in the various colleges and institutes in PAAET. Existing equipment's, the use of these equipment's, and the importance of them. Future plans were also discussed.*

Name: *Dr. Mansour Chirag*

Job Title: *Director/ Computer and Information Centre/ Kuwait University.*

Date of Conversation: *Saturday, 18th of Jan, 1997.*

Place of Meeting: *Telephone conversation.*

General Issues Discussed: *The existence of Multimedia Labs, Hardware and Software in Kuwait University. The use of Internet and Multimedia for learning. Future plans for the use of multimedia. existing hardware in all colleges and Faculties.*

Name: *Dr. Khalid Al-Muraifea*

Job Title: *Teaching Staff/ Edu. Tech. Dept/ College Of Basic Education/ PAAET.*

Date of Conversation: *Saturday, 11th of Jan, 1997.*

Place of Meeting: *Staff Office/ Edu. Tech. Dept/ College Of Basic Education.*

General Issues Discussed: *The existence of Multimedia Labs, Hardware and Software in PAAET. The importance of CAL and Multimedia for learning. Future plans for the use of multimedia in the College of Basic Education and PAAET.*

Name: *Dr. Hassan Al-Ansari*

Job Title: *Director/ Library management and Educational Technology/ Kuwait University.*

Date of Meeting: *Monday, 20th of Jan, 1997.*

Place of Meeting: *Library management and Educational Technology/ Kuwait University./ Director Office*

General Issues Discussed: *The existence and the use of Multimedia and CD-ROM in Kuwait University, and the Library. The use of the Internet and research. Future plans and trends were also discussed.*

Name: *Dr. Iqbal Babahani*

Job Title: *Department Head/ Educational Technology Department/ College Of Education/Kuwait University.*

Date of Meeting: *Monday, 20th of Jan, 1997.*

Place of Meeting: *Head of Educational Technology Dept. Office/ Kuwait University.*

General Issues Discussed: *Methods of teaching and course delivery in the college. The existence of Multimedia educational Labs, software and hardware, and the authoring environment. Computer courses contents and future trends in the department.*

Name: *Dr. Souad Al-foureeh*

Job Title: *Project leader/ KISITP Project/ Ministry of Education.*

Date of Meeting: *Wednesday, 22nd of Jan, 1997. Evening time.*

Place of Meeting: *Dr. Souad' Office/ Ministry of Education/ training division.*

General Issues Discussed: *The Kuwait Intermediate School Information Technology Project KISITP. What has been done, and Why?? the future of the use of computers & CAL and Multimedia in the intermediate and high school level. How this will affect the use of CAL and Multimedia in the higher education level in Kuwait.*

Name: *Dr. Assad Al-Sanad*

Job Title: *Dean/ College Of Engineering and Petroleum/ Kuwait University.*

Date of Meeting: *Sunday 19 of Jan, 1997.*

Place of Meeting: *Dean's Office / College Of Engineering /Kuwait University.*

General Issues Discussed: *The establishment of Multimedia Laboratory in the college. Where did the idea come from, implementation plan, procedures, and for what purpose. As well as the existing use of Multimedia in teaching in the college.*

Name: *Dr. Souhaila Al-moutawa*

Job Title: *Teaching staff/ College Of Engineering and Petroleum/ Kuwait University.*

Date of Meeting: *Sunday 19th of Jan, 1997.*

Place of Meeting: *Staff's Office / College Of Engineering /Kuwait University.*

General Issues Discussed: *The establishment of Multimedia Laboratory in the college. Also discussion of the report " The status of Application of Computer Aided Instruction and Multimedia Tools in Engineering Colleges in the United States" that she has written, and how to relate that study to the College of Engineering in Kuwait.*

Name: *Dr. Abdul-Razaq Al-Shayjee*

Job Title: *Dean Assistant/ College Of Islamic Studies/ Kuwait University.*

Date of Meeting: *Tuesday 21st of Jan, 1997.*

Place of Meeting: *His Office / College Of Islamic Studies /Kuwait University.*

General Issues Discussed: *The use of CAL and Multimedia to teach Islamic subjects. As he is the only instructor in the college that use Educational packages to teach his students "Hadeeth". How he sees the use and what are the benefits, and what about future wide implementations, and problems.*

Name: *Dr Basma Al-Hajj*

Job Title: *Consultant/ Educational Research Unit/ Ministry of Education.*

Date of Meeting: *Sunday 18th of Jan, 1997.*

Place of Meeting: *Consultant's Office/ Ministry of Education.*

General Issues Discussed: *As she developed a training programme "Training Intermediate School Teachers on The Use of Multimedia Educational Packages for Intermediate level Students". Issues such as the idea of the training, designing the workshop, preparing the materials and evaluating the Multimedia Educational packages that were used in the training.*

Name: *Nazeeh Al-Shayea*

Job Title: *Director/ Computer and Information Centre/ Ministry of Higher Education.*

Date of Meeting: *Wednesday 22nd of Jan, 1997.*

Place of Meeting: *Director's Office/ Ministry of Higher Education.*

General Issues Discussed: *The existence of Multimedia Labs, Hardware and Software in the ministry. Future plans for the use of multimedia. existing hardware in the ministry, and what are the obstacles of implementation.*

Name: *Dr. Habeeb Al-Sahhaf*

Job Title: *Dean Assistant/ College Of Engineering and Petroleum/ Kuwait University.*

Date of Meeting: *Sunday 19 of Jan, 1997.*

Place of Meeting: *Dean's Assistant' Office / College Of Engineering /Kuwait University.*

General Issues Discussed: *The establishment of Multimedia Laboratory in the college. Where did the idea come from, implementation plan, procedures, and for what purpose. As well as the existing use of Multimedia in teaching in the college.*

Name: *Dr. Amr Azzouz*

Job Title: *Programme specialist in Engineering Sciences/ UNESCO/ Cairo Office.*

Date of Meeting: *Monday 27 of Jan, 1997.*

Place of Meeting: *UNESCO/ Cairo Office/ Cairo/ Egypt*

General Issues Discussed: *Discussion of the USEE Project. its aim and objectives. How educational Multimedia programmes will be implemented for the Arab University. And why and future trends.*

Name: *Dr. Hazem Abdul-Azeem*

Job Title: *Director/ SAKHR Software/ Cairo, Egypt.*

Date of Meeting: *Sunday, 26th of Jan, 1997.*

Place of Meeting: *Director's Office/ Sakhr Software/ Naser City/ Cairo/ Egypt.*

General Issues Discussed: *Discussion of the current application, development, and implementation. Issues related to Developing Multimedia Educational Packages in Arabic were discussed. Various tools use, Arabic OCR, and Arabic Internet, as well as speech recognition.*

Name: *Eng. Mahmoud Al-Marakibi*

Job Title: *Director/ SAKHR Software/ Heritage Centre / Cairo, Egypt.*

Date of Meeting: *Sunday, 26th of Jan, 1997.*

Place of Meeting: *Director's Office/ Sakhr Software/ Heritage Centre / New Egypt/ Cairo/ Egypt.*

General Issues Discussed: *Discussion of the current application, development, and implementation. Issues related to Developing Multimedia Educational Packages in Arabic were discussed.*

Appendix (B)

Sample Teaching Staff Questionnaire

Dear Teaching Staff Members:

I am a research student, doing a PhD. in Computer Science at the University of Hertfordshire, United Kingdom. This questionnaire will help me in assessing the use of Educational Media in general and the use of Multimedia Computer Educational Programs or Tutorials in particular in the Kuwaiti Higher Education. Please look carefully at each of the following questions and choose the appropriate response.

- 1- Your College:
- 2- Your Department.....
- 3- How long have you been a staff teaching member in Kuwait.....
- 4- Grade/ Position:

5- Is there an Educational Media Centre which carries educational equipment such as Overhead projectors, slide projectors, video and TV, Computer educational programs, etc., in your college?

Yes No I don't know

6- Does your college have an over-head projector?

Yes No I don't know

7- Does your college have a slide projector?

Yes No I don't know

8- Does your college have Video and TV?

Yes No I don't know

9- Does your college have any educational films?

Yes No I don't know

10- Does your college have computer educational or multimedia computer educational program or tutorials?

Yes

No

I don't know

11- How often have you used overhead projector for your lectures/lessons?

100% **75-99%** **50-74%** **25-49%** **1-24%** **0%**

12- How often have you used Slide Projector for your lectures/lessons?

100% **75-99%** **50-74%** **25-49%** **1-24%** **0%**

13- How often have you used Video films and TV for your lectures/lessons?

100% **75-99%** **50-74%** **25-49%** **1-24%** **0%**

14- How often have you used any computer educational programs or tutorials as a presentation tool in the classroom for your students?

100% **75-99%** **50-74%** **25-49%** **1-24%** **0%**

15- How often do your students use any computer educational programs or tutorials which is related to your course content?

100% **75-99%** **50-74%** **25-49%** **1-24%** **0%**

16- If you used any computer educational programs or tutorials for your students can you name them, specify the subject, and where did the students use it?

Title of the program	Subject of the program	Where did you use it

Please answer the following questions by putting a cross on the scale, to show what you think. For example if the question asked:

Would you like to see computer educational centre in your college?

Very much Very little
 | _____ X _____ |

this means that you like to see computer educational centre in your college almost very much. There is no need to spend too much time worrying about your answer, I would prefer if you can give your first reaction.

17- Do you think that there is good services and support for facilitating the use of educational media in your college?

Very good Not at all
 | _____ |

18- Do you think that there is good services and support for facilitating the use of Computer based learning materials in your college?

Very good Not at all
 | _____ |

19- Do you think that computer assisted learning (CAL) and multimedia enhance your students' learning experience?

Very much Not at all
 | _____ |

20- Would you like to see a multimedia computer educational unit in your college? (the objectives of the unit would be to set a multimedia lab, develop multimedia courseware, train staff, etc..).

Very much Not at all
 | _____ |

21- Would you urge your students to use multimedia computer educational programs related to your course content?

Very much Not at all
 | _____ |

22- Would you like to learn how to use and develop multimedia computer educational programs for your lectures?

Very much Not at all
 | _____ |

23- Do you think it would be difficult to establish a Multimedia or Computer Educational Unit in your college?

Very difficult _____ **Not at all**

24- What are the difficulties for establishing A Multimedia Computer Educational Unit?(Mark the appropriate answer, *You can tick more than one*)

- A- Administration difficulties**
- B- Financial difficulties**
- C- No expertise to be in charge of the unit**
- D- Staff members will not support the idea**
- E- Other, Specify:**

.....
.....
.....
.....
.....
.....
.....
.....

25- Can you add any comments regarding the use of Multimedia Computer Educational materials in your college (Such as are they helpful, would you like to use them , would you like your students to learn from them as an additional method beside your lectures)

.....
.....
.....
.....
.....
.....
.....
.....

Thanks for your co-operation
Ahmed Al-hunaiyyan

Appendix (C)

Sample of Student Questionnaire

Dear Student,

I am a research student, doing a PhD. in Computer Science at the University of Hertfordshire, United Kingdom. This questionnaire will help me in assessing the use of Educational Media in general and the use of computer educational programs or tutorials and Multimedia in particular in the Kuwaiti Higher Education. Please look carefully at each of the following questions and choose the appropriate response.

1- What is your college?

2- What is your department?

3- What year are you in ?

4- Do your instructors use overhead projector in the classroom?

100% 75-99% 50-74% 25-49% 1-24% 0%

5- Do your instructors use Slide Projector in the classroom?

100% 75-99% 50-74% 25-49% 1-24% 0%

6- Do your instructors use Video films and TV in the classroom?

100% 75-99% 50-74% 25-49% 1-24% 0%

7- Do your instructors ever use computer educational programs or tutorials in the classroom or in the computer centre?

100% 75-99% 50-74% 25-49% 1-24% 0%

Please answer the following questions by putting a cross on the scale, to show what you think. For example if the question asked:

Do you like your college?

Very much

| _____ X _____ | _____ | _____ |

Very little

this means that you like your college almost very much. There is no need to spend too much time worrying about your answer, I would prefer if you can give your first reaction.

8- When educational media was used, do you think that it helped you in understanding your lectures/lessons?

Very much **Not at all**
 |-----|-----|-----|-----|

9- How frequent to use any computer educational programmes or tutorials?

Very much **Not at all**
 |-----|-----|-----|-----|

Please, list the computer educational programs that you used and where did you use it (College, home, friend, company, ..etc.)

Title of the program	Subject of the program	Where did you use it

10- Do you agree that using computer tutorials help you to better understand your lectures?

Very much **Not at all**
 |-----|-----|-----|-----|

11- Do you use the Internet and the World Wide Web to get information for your studies?

Very much **Not at all**
 |-----|-----|-----|-----|

12- Can you add any comments regarding the use of Computer Educational program in your college (Such as are they helpful, would you like your instructors to have you use them , would you like that you learn from them as an additional method beside the lectures, ..etc.)

.....

Thanks for your co-operation
Ahmed Al-hunaiyyan