

Information Technology and Knowledge recourses

Contents

Subjects	Page No.
5.1 Introduction	5-3
5.2 Management Systems	5-3
5.2.1 Information Management Systems	5-3
• Project (B-113-J0) Developing an Integral Management System in fayoum Univ.	
• Project (A-043-H0) Establishing an Education Management System in Alex. Univ.	
5.2.2 Hospital Management Systems	5-4
• Project (A-023-S0) Establishing Hospitals & Distant Communications Network for Medical Services & Medical Education in Tanta Univ.	
• Project (C-040-M0) Establishing an Integral Automated Information System for the Dentistry Hospital in Minia Univ.	
5.2.3 Human Resource Administration & Planning Systems	5-5
• Project (B-026-K0) Human Resource Management & Planning in Helwan Univ.	
5.2.4 Credit Hour Electronic Systems	5-5
• Project (A-050-H0) Introducing Credit Hours in Alex. Univ.	
• Project (B-132-K0) Introducing Credit Hour System & Electronic Management System in Helwan Univ.	
5.3 Electronic Academic Enhancement	5-6
Virtual Reality	5-6
• Project (A-070-J0) Preparing Virtual Reality Models for Teaching Upper Parts Anatomy in Cairo Univ.	
5.3.1	
• Project (D-174-N0) Developing Tourist Education through Updating Methods of Practical Training using Electronic Simulation Software in MenoufyiaUniv.	
E-learning	5-6
• Project (D-031-H0) Developing Interactive Presentation as a Tool for Education and Continuous Assessment in Medical Education in Alex. Univ.	
• Project (A-112-G0) Developing Education System in Egypt in Ain Shams Univ.	
• Project (A-011-S0) Training Staff members in the faculties of Tanta Univ. on Designing, Producing, and Updating their Courses through Interactive Multimedia Software Programs and E-learning	
5.3.2	
• Project (A-024-H0) Establishing an Infrastructure for E-learning Administration for the Degree of Diploma in the Higher Institute for Public Health in Alex.	
• Project (D-091-I0) Distant Learning using the Internet between the Faculties of Information & Technology in Assiut & Cairo Universities	
• Project (C-053-T0) Establishing Networks for Connecting University Centers with the Units of the Ministry of Health to	

	Enhance Distant Learning in the Field of Protective Pediatrics in Zagazig Univ.	
	<ul style="list-style-type: none"> • Project (D-149- G0) Establishing an Electronic Vision Center to Enhance Equal Learning Opportunity for Blind Students in Ain Shams Univ. • Project (B-092-L0) Developing the Teaching Methods of Urinary Passages in Mansoura Univ. 	5-10
5.3.3	<ul style="list-style-type: none"> • Project (B-029-K0) Developing the Use of Education Techniques & Potentials in Helwan Univ. • Project (A-107-J0) Using Information Technology and Clinical Skills Training for the Improvement of the Educational Environment in Cairo Univ. • Project (B-051-I0) Establishing an Educational Resource and Multimedia Center in the Faculty of Science, Assiut Univ. 	
	Electronic publishing	5-12
5.4.	<ul style="list-style-type: none"> • Project (A-082-I0) Establishing an Electronic Publishing Unit in Assiut Univ. 	
5.5	Library System	5-12
	Digital Libraries	5-12
5.5.1	<ul style="list-style-type: none"> • Project (A-109-K0) Developing a Library Information System in Helwan Univ. 	
	Automated Libraries	5-13
5.5.2	<ul style="list-style-type: none"> • Project (C-081-J0) Digital Collection & Electronic Dissemination for the Digital Postgraduate Libraries in Kasr El-Eini Medicine in Cairo Univ. • Project (C-003-N0) Establishing an Information System for Agricultural Economy Research in MenoufyiaUniv. 	
	Digital Libraries for Medical Radiation Films	5-13
5.5.3	<ul style="list-style-type: none"> • Project (A-062-J0) Establishing a Digital X-ray Film Library in the Department of Radiation in Kasr El-Eini Medicine in Cairo Univ. 	
5.5.4	Subscription to International Digital Periodicals	5-14
	Databases	5-14
5.6	<ul style="list-style-type: none"> • Project (B-010-G0) Establishing a Database for Child Psychology Medicine and its Role in Medical Education and Decision-taking in Ain Shams Univ. • Project (A-083-I0) Establishing a Database for Educational Equipment in Assiut Univ. • Project (B-092-L0) Completing a Database for Urinary Passages Surgery in the Kidney Center in Mansoura Univ. • Project (A-001-J0) Establishing a Database for Tissue Bank and Pathology in the Faculty of Veterinary Medicine in Beni-Suef Univ. • Project (D-133-K0) Establishing a Database for Argonemic Designing in the Faculty of Applied Arts in Helwan Univ. 	
5.7	Training	5-15
5.8	Summary & Recommendations	5-15

5.1. Introduction

In the present era, information and communication technology represents the corner stone for the renaissance of society and decision-taking. The technology system is related to several axes: preparing integral infrastructure and advanced equipment, using the latest specialized software programs, preparing technical applications that satisfy the requirements of the work market. Finally, the most effective part of the system is qualifying human resources that can deal, develop, and maintain it. Given the important role of HEEPF in this direction, a number of financed projects were encouraged and supported to activate this orientation within Egyptian universities to establish an integral system in the field of information and communication technology.

Among these projects are ones that aim at establishing an integral electronic management system for universities and university hospitals. Through HEEPF financed projects, ideas were given shape through upgrading information and clinical skills to enhance education either through using different educational media, or designing and producing electronic courses. Given the importance of recording information, some exemplar projects displayed the contents of the digital libraries developed using databases and connected with a unified digital network. Then, human resources were trained on this technology to maximize the use of this development.

It is worth noting that coordination with the Information and Communication Technology Project (ICTP) in the Project Management Unit (PMU) added professionalism to the management team who provided HEEPF projects with opinion and expertise that enriched these projects without having to get double finance for each activity. Figure (5-1) shows HEEPF projects fields related to information and communication technology and their joint efforts with the Information and Communication Technology Project (ICTP) in Egyptian universities.

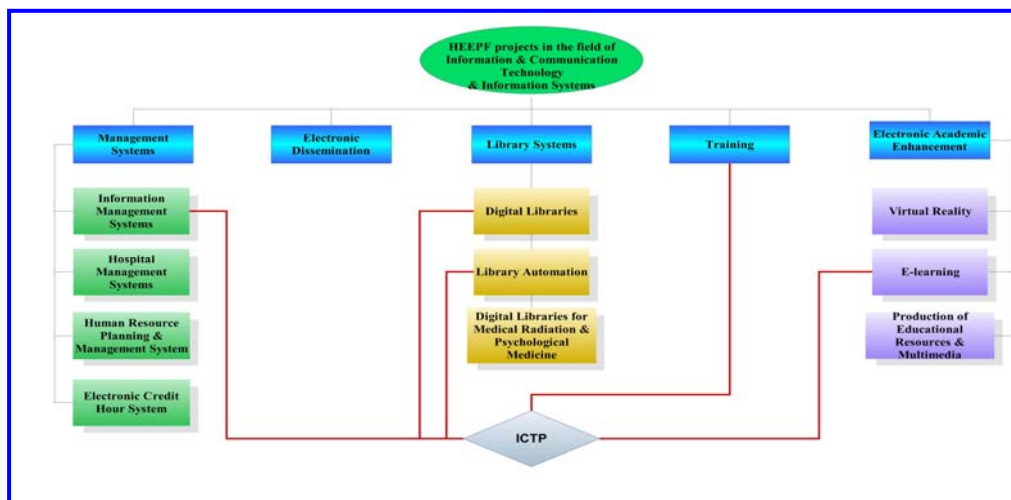


Fig. (5-1): HEEPF financed projects work in the field of information and communication technology and their relationship with other enhancement projects

5.2. Management Systems

5.2.1 Information Management Systems

In the field of electronic Management, Project (B-113-J1) in Fayoum Univ. aims at the establishment of an integral Management system for the Univ. in an advanced, efficient

framework including most administrative activities in the University Presidency and faculties using SYE-BASE software. This system includes six modules for workers' affairs, students' affairs, the library, stores & purchase system, payable system, and control system. The faculties of the Univ. are connected with the Higher Council of Universities through **Back Bone Switch** with 34 MB/S.

In Alex. Univ., Project (A-043-H0) focused on building infrastructure and, then, an integral software system for the automation of all administrative work in the Faculty of Engineering: numbers of registered students, students' affairs, exams work, staff members affairs, and postgraduate students' affairs using **Oracle Data Base**. The project also trains employees and administrative officials on using this system which will be generalized to all educational institutions of Alex. Univ.

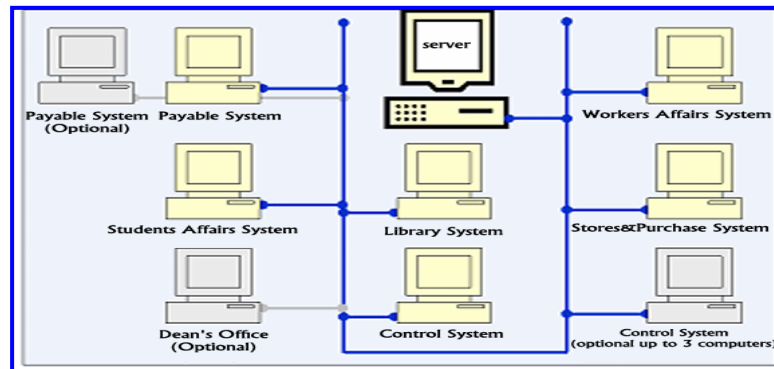


Fig (5-2): The Electronic Management System in the Faculty of Engineering, Fayoum Univ.

5.2.2 Hospital Management Systems

In the field of university hospital electronic Management, Project (A-023-S0) in Tanta Univ. established infrastructure to connect different sections of the medical community hospitals with a **Fiber Optics Network** which represents the basic structure for future work. Patients' basic and personal data, as well as their medical condition, diagnostic and treatment procedures that were carried out in the different sections, and their check in and check out data were recorded using **Oracle Data Base** to follow up the patients in the hospital service centers. The project also includes a preliminary system for keeping and archiving radiation films known as **Picture Archiving & Communication System PACS** to transmit radiation pictures to the hospital internal network, keep and circulate them among the different sections and hospitals through a user-friendly interface. The recording of diagnostic and medical procedures is based on world accreditation systems (**CPT – ICD**).



Fig (5-3): Method of saving Patients' Data in the hospitals of Tanta Univ

In Minia Univ., Project (C-040-M0) treated the lack of administrative information resources using modern technology as a comprehensive and fast means of communicating information whether in administrative tasks to enhance the administrative structure or in teaching methods using a computer lab to train the staff members on different software programs such as (Power Point – Access – Excel – Word – Internet) as well as how to set up an electronic site.

The content of training courses was uploaded to the project electronic site www.mudh.net to provide students with more efficient and accurate means of gaining knowledge to implement medical software. Moreover, an integral electronic system was established for the Dentistry Hospital Management.



Fig. (5-4): The Project Electronic Site, faculty of Dentistry , Minia Univ.

5.2.3 Human Resource Administration & Planning Systems

The Human Resource Administration is considered the backbone of any successful program. The main goal is the enhancement, update, and transformation of the general personnel and staff members administration into a modern strategic administration. Helwan Univ. took the initiative through Project (B-026-K0) that set up a plan for the University workforce, established an information system for human resource management, transformed the general personnel administration into a human resource administration, and upgraded the employees' and managers' skills. In addition, it prepared reports on the University needs of staff members' assistants for the next five years, the results of academic structures, the status quo of staff members and their future needs, as well as the attitude of the non-academic workforce and what is required of them.



Fig (5-5): Human Resource Information Center, Helwan Univ.

5.2.4 Credit Hour Electronic Systems

In the field of upgrading postgraduate studies and keeping pace with the latest educational systems, i.e. the credit hour system applied in world universities, Project (A-050-H0) in Alex. Univ. spread the culture of this system among staff members and students. After referring to the University Board and Specialized Sector Committees in the Higher Council of Universities, the University Faculties and Institutes began to change their curricula and provided their postgraduate sections with computers. Currently, a special computer software program is being prepared for the credit hour system to be used in all Egyptian universities. Moreover, curricula of 22 faculties have been changed and a ministerial resolution to apply the new curricula in a number of faculties such as Nursing, Agriculture, and Engineering was issued.

Project . (B-132-K0), a joint project between Helwan and Menoufyia Universities, focused on the introduction of the credit hour system and electronic admittance system. It aimed at

introducing the credit hour system and training staff members on designing courses and assessing students using this system. An analysis of the skill gap in a sample of 700 graduates was carried out, courses were prepared for all faculties, and a credit hour chapter was prepared.



Fig. (5-6): Credit Hour Automated System, Alex. Univ.

5.3. Electronic Academic Enhancement (Refer to chapter 4 on E-learning & Simulation Labs for more examples)

5.3.1 Virtual Reality

Project (A-070-J0) in Kasr El-Eini Medicine, Cairo Univ. is an example of what can be achieved in the field of using virtual reality. Through this project, virtual reality CDs for the anatomy of the human Upper Limb (shoulder, upper arm, arm, and hand) will be produced using **Authorware** program. Virtual reality 3D models of all bones were done, in addition to using multimedia (pictures, sound, motion pictures, anatomy simulators) in the anatomy of bones, muscles, blood vessels, and nerves. Rubrics on each of the human parts were also prepared. Besides the scientific value of **Authorware** for the students of Medicine and general practitioners, an automatic multi-row turntable was designed and made in Egypt with small costs for the production of 3D electronic models where automatic photography is used for the production of virtual models. This is a serious step towards change and transformation of traditional anatomy into using multimedia technology and virtual reality in medical education and self-learning in general.

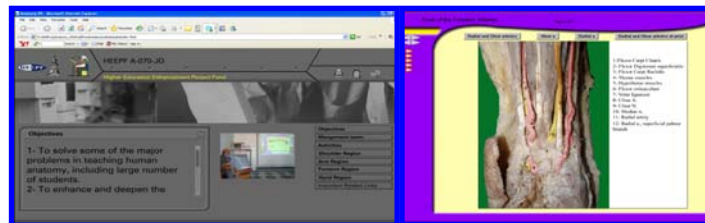


Fig. (5-7): Electronic Site of the Project, Kasr El Eini Medicine, Cairo Univ.

Project (D-174-N0) in Menoufyia Univ. followed another approach that corresponds with world systems for the development of tourist education through updating practical training methods using electronic simulation software programs.

5.3.2. E-learning (Refer to chapter no. 4/9 on E-learning & Simulation Labs for more examples)

Project (D-031-H0) in Alex. University offers a modern example of learning called interactive presentation, which is a modern way of presenting lectures in which attendants share ideas and opinions through using audience response system. To activate interactive presentation, a lap top, a data show, a screen, a control unit for receiving votes, and wireless voting units are used in presentation. Presentation slides are divided into two different classes: slides for presenting data and information, and Q & A slides that include an open question for voting

followed by the results in the form of a graph. The presentation is prepared in the form of a PowerPoint file and questions are put on the voting software program on which the right answer is installed. During the presentation, whenever a question is presented, students give their votes choosing one of the available choices. The interactive computer gives the results of the vote immediately in the form of a graph displayed on the answer slide. At the end of the presentation, the results of the voting are saved on an Excel file. This system can be used in classroom training, rubric, student courses, immediate student evaluation and comprehension assessment, distance interactive learning, facilitating student survey, and helping the group to take decisions.



Fig. (5-8): Students during Interactive Presentation, Faculty of Medicine, Alex. Univ.

In this field, Project (A-112-G0) in Ain Shams Univ. established an electronic site for the university www.evu.edu.eg which includes links for two Chemistry courses and interactive virtual labs for Chemistry, Physics, Applied Mathematics. Besides, a computer lab comprising 20 computers and LAN were established at the headquarters of the project. One of the project activities was the development of 8 electronic courses to be used in e-learning and the training of 350 staff members and their assistants in different workshops on e-learning and the way of preparing electronic courses. Work is still going on in this project.

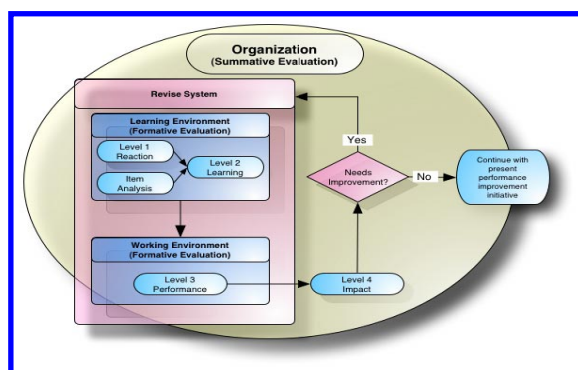


Fig. (5-9): Assessment of the E-learning System, Faculty of Girls, Ain Shams Univ.

Through Project (A-011-S0) in Tanta Univ., a number of staff members were chosen from different faculties (Faculty of Science, Faculties of Education in Tanta and Kafr El Sheikh, Faculty of Agriculture, Faculty of Veterinary Medicine, Faculty of Athletic Education, Faculty of Medicine, Faculty of Dentistry, Faculty of Engineering, Faculty of Special Education) to be trained on reformulating and developing one of their courses to be worldly competitive, and using **ASP** language in building sites. **ASP** language includes a modern technology called **Dot Net Framework** which has comprehensive solutions for publication and programming problems on the web. Staff members were also trained on building databases using **SQL Server** for: Student admittance, test results. **SQL Server** has potentials for development, change, omission, addition, and publication of courses on the site. Its

specifications were defined as: Disk Space = 10 GB, E-mail (Unlimited Mailboxes), Accounts, Data Transfer 20000 MB/month, FTP Accounts (Unlimited Accounts).



Fig. (5-10): Electronic site of the project, Faculty of Education, Tanta Univ.

An E-learning course was uploaded to www.tanta.elearning.edu.eg, 600 male and female students were trained through this site on the course objectives, different presentation strategies, practical and theoretical exercises, student assignments, browsing the worldly available sites, receiving continuous assessment, and knowing the results of their performance. Thus, students interact with the teacher through visiting the site and sending e-mails. The following are the courses available on the site: Electrical Engineering, Animal Malnutrition, Animal, Poultry, and Fish Nutrition and Malnutrition Diseases, Child Courses, Education Media, Racket Games Principles, Gynecology and Obstetrics, Topology, Geology, Physiological Psychology, General Entomology, Descriptive Statistics and Comparison of Averages SPSS using statistical software, Mechanic Measurements, Plant Nutrition, Orthodontics, Pharmacology.

In the field of e-learning infrastructure, Project (A-024-H0) in Alex. Univ. administrative employees in different administrative sections were trained on using the computer, performing e-learning, developing electronic courses using Flash and PowerPoint, in addition to the establishment of an electronic site for the Higher Institute for Public Health www.hiph.edu.eg. The project equipped two computer labs, prepared infrastructure, qualified the personnel required for the management of training courses and postgraduate diploma, and activated cooperation protocols for social service.



Fig.(5-11): The electronic site of project . (A-024-H0), Alex. Univ.

Through Project (D-091-I0), instantaneous learning was achieved using videoconference between the Faculties of Information and Technology in Assiut and Cairo Universities. This program is unique for it allows students in both universities to have instantaneous lectures through the internet. The program uses video screens, and an electronic board that transmits whatever the lecturer writes to the other party. Thus, it allows interaction through the internet everywhere, facilitates holding interactive, mandatory seminars with some foreign universities, and allows the transmission of lectures to a large number of beneficiaries outside the lecture hall. This project is a good example of cooperation between similar faculties in

different Egyptian universities. In addition, it increases the means of cooperation with foreign universities in the field of experience and technology transfer.



Fig.(5-12) Integration between the faculties of Information and Technology in Cairo and Assiut Universities

In the same field in the medical sector, Project (C-053-T0) in Zagazig Univ. aims at the establishment of an information network that connects the university centers with the units of the Ministry of Health. Three Universities (Zagazig , Cairo, Mansoura) supported the distance learning system in the field of Preventive Pediatric Medicine. Meetings were held among the three universities and 7 training centers affiliated to the hospitals of the Ministry of Health through Video Conference. Since communication between health centers and universities can take place only through modern technology which allows these centers to consult the three university centers in case of emergency, **Telemedicine** system is applied.

Three computer labs were established in each university, and training courses on using e-mail and distant learning software were offered to physicians to create a new generation of students who can use the advanced means of e-learning, especially in the field of Preventive Pediatric Medicine. Such field needs activation and promotion through electronic means because of its importance in preventing pediatric diseases before they occur.

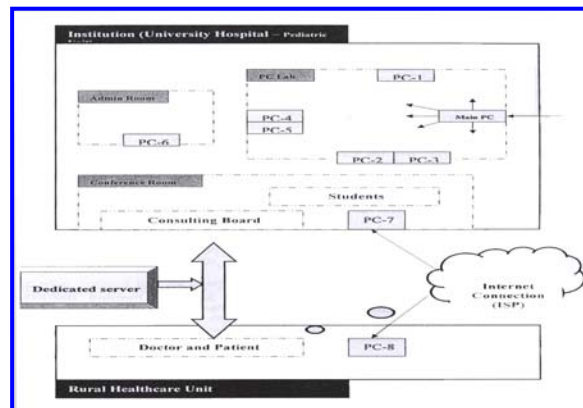


Fig. (5-13) Information Network for University Centers, Faculty of Medicine, Zagazig Univ.

In the field of immediate transmission of knowledge, Project . (B-092-L0) in Mansoura University designed a database, completed the information network and connected it to the external clinic in the Medical center for Urinary Passages, and developed the software programs required for entering, saving, and processing radiation pictures and ultrasonic waves. In addition, two teaching and conference halls were equipped in the center with an audio-video system that allows shooting and transmitting surgeries from the operation room in the center to the conference hall, as well as surgeries performed abroad which allows tele-teaching and gives hands on experience after knowing theoretical parts. Patients' data were also automated through the addition of Patients Information System (PIS) unit which is responsible for entering all data of the center which includes Internal Patients, External

Clinics, Surgery, and Intensive Care, as well as adding new software programs that allow entering radiation pictures such as DICOM.

In the medical sector, some projects were concerned with medical distant learning such as Project (B-092-L0) in the Kidney Center, Mansoura Univ., Project . (C-043-S0) in the Department of Otolaryngology, Faculty of Medicine, Tanta Univ., and Project . (C-100-T0) in the Departments of General Surgery and Nerve Surgery in Kasr El Eini Medicine.

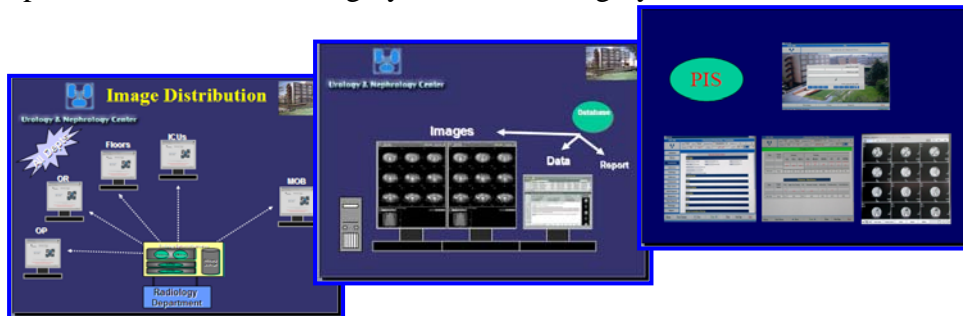


Figure (5-14): Automating Patients' Data in the Kidney Center, Mansoura Univ.

In the field of excellent educational service for special needs students, Project . (D-149-G0) in Ain Shams University established an electronic Vision Center where courses are offered to blind students in the Faculty of Arts to train them on using the "Ibsar" system to read and write any text. Through this system, courses can be transformed into the electronic version that "Ibsar" software requires. University leadership support, equipment, and provision the center with an appropriate location, as well as their encouragement of professors to develop courses and questions on CDs have led to the exceptional success of this project and the high demand for the Vision software, training courses, and reading the cultural library that contains the latest issues of scientific periodicals through the internet. An electronic site for the project was set up <http://arts.shams.eg/pages/home.htm>. Coordination between Al-Azhar and Assiut Universities has been done to transfer the experience of that center to establish similar centers.



Fig.(5-15): Training of blind students on the "Ibsar" software at the Faculty of Arts Ain Shams Univ.

5.3.3 Educational Resources & Multimedia (Refer to chapter 4 on E-learning & Simulation Labs for more examples)

Project (B-029-K0) in Helwan Univ. aimed at providing students, staff members, and workers with information and communication infrastructure using modern technology. It also aimed at training them on multimedia and education technology that are used as advanced educational equipment for benches of 5 faculties to upgrade education. Such equipment included multimedia equipment for the presentation of lectures, electronic schedules for course

management, as well as using the internet to reach research information, setting up and developing web pages, using e-mail, forums, and e-mail lists.



Fig. (5-16): Modern Classroom Equipment, Helwan Univ.

In the same field, Project (A-107-J0) in Cairo Univ. aims at upgrading the skills of staff members and their assistants in the field of using modern teaching methods and information technology. To enable them to use these methods, two clinical skill labs were established and equipped with the latest training models and simulation equipment. Moreover, in collaboration with HEEPF financed Electronic Medical Library Project and the TEMPUS E-learning Project, a computer lab was equipped with 28 computers to be used in e-learning and search on information databases for medical references and periodicals. Furthermore, in collaboration with HEEPF Electronic Medical Library Project, a modern information center was equipped with 8 Servers and Data Storage Disks. In addition, scientific and educational materials for teaching and developing staff members' clinical skills were prepared including: Staff members training guide, clinical skills system, communication skills model, overlapping skills. Besides, in collaboration with the E-learning Project, interactive educational materials were produced and made available in the computer lab for e-learning.



Fig. (5-17): Information Center & Virtual Teaching Models, Faculty of Medicine, Cairo Univ.

In the same field, Project (B-051-I0) in Assiut Univ. established an excellent center for educational media and an electronic site www.trmc.aun.edu.eg. The center offers different training courses on the following programs: Excel, Word, Photoshop, HTML, Front Page, PowerPoint, Flash. In addition, 18 courses were transformed into an electronic version and coordination was done with Basic Science Projects on the University level.



Fig. (5-18): Courses of the Center, Faculty of Science, Assiut Univ

5.4. Electronic publishing

In the field of electronic publishing, Project . (A-082-I0) in Assiut Univ. offered training courses to upgrade the skills of staff members and their assistants in electronic publishing. The courses introduce computer programs used in electronic publishing and interactive learning such as: Flash, Acrobat Read/Write, Photoshop, front Page, messenger Programs, Java, html Language.

For example, in one of the electronic publishing training courses, WinWord and Photoshop programs were used to establish a table of contents and turn the file into a PDF, then into HTML, and Flash program was used to design a Flash film and include it into a PowerPoint slide, then a Hyperlink was established and saved using PPS and then HTML. In another electronic publishing training course, FrontPage and Flash programs were used to upload a Flash film to a website, divide a big image into parts, and publish texts using Graphics. The culmination of electronic publishing infrastructure was the establishment of a publishing unit supported by well trained technicians to reach the optimal method of electronic publishing of Arabic texts for the benefit of students and the University community and organize electronic chatting and e-mails between students and teachers. This would lead to the rise of the educational process, university service, distant learning, and interactive learning through the internet at Assiut Univ.



Fig.(5-19): One of the texts used in electronic dissemination, Assiut Univ.

5.5. Library Systems

5.5.1 Digital Libraries

In the field of digital libraries, Project (A-109-K0) in Helwan Univ. aimed at developing the University libraries and the Central Library digitally using the World Library Program (e-LIS) obtained from the Cabinet before starting the project and developing it in full collaboration with the Decision-taking Center IDSC to reach the final Web-Version-eLIS with foreign finance. An integral digital system DLTD was designed to save Master's Degree and Doctorate theses on the level of all faculties in the University. The system is interconnected through the internal network to allow any beneficiary from other Universities to obtain research information. In addition, a modern security system for the library holdings was established.



Fig. (5-20): A modern protection system for the library holdings, Helwan Univ.

5.5.2 Automated Libraries

Project (C-081-J0) included seven libraries in seven Faculties of Medicine in (Cairo, Suez Canal, Alexandria, Zagazig , Minia, Fayoum, and Beni Suef). The project transformed libraries' contents were into a digital form available through a network that connects the participating libraries and allows exchange of contents. In this context, a library administration program was developed and librarians were trained on using it to make Egyptian scientific production available and exchange it with its foreign counterpart. The Faculty of Medicine, Cairo Univ., was chosen to be the chief center for the joint electronic medical library where information is stored on the project Servers making use of the infrastructure established through coordination between several Higher Education Enhancement Projects. Project . (C-003-N0) has also established an information system for Agricultural Economy Research in Menoufyia Univ. It included many valuable scientific theses in this field and prepared the required staff for operating this system.

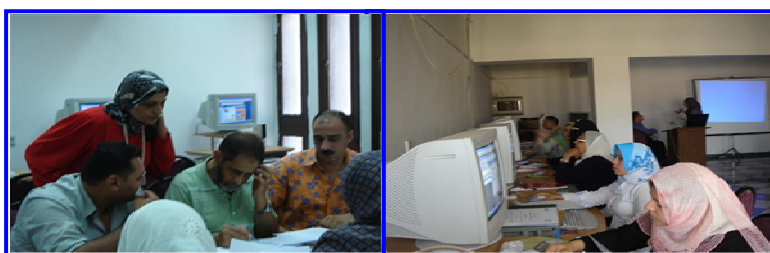


Fig. (5-21) Browsing digital pages, Faculty of Medicine, Cairo Univ.

5.5.3 Digital Libraries for Medical Radiation Films

Project (A-062-J0) in Cairo Univ. is an excellent example of developing a digital storage and recovery system for radiation films as well as building a computer network to connect users stations with a Server installed according to the developed application. In addition, the computer network is connected with a number of modern digital radiation equipment that allow immediate transmission of radiation pictures using DICOM. The library holds more than 12000 films representing more than 5000 cases divided on all human body systems (10 systems) such as the digestive system, the nerve system, ... etc. Each system is divided into 9 parts according to the type of disease (congenital diseases, tumours, ... etc.). Cases are organized, listed, and given reports of pathological history and diagnosis. Some cases are documented with results of surgeries, pathology, or a summary of some scientific references. A number of radiation department equipment were connected to the library equipment to transfer instantaneous digital pictures to the digital library system with no need of radiation pictures in an application of Picture Archiving & Communication System PACS. This system is applied in world hospitals where pictures are taken immediately from radiation equipment, stored, and archived without printing them. They are seen on the internal network and can be sent to other internal or external centers for consultation. Thus, copies of radiation pictures, tissue samples, and patients' video images can be saved on the system and transferred to electronic hospitals administration systems for any desired period of time.



Fig. (5-22): Medical radiation film digital library, Faculty of Medicine, Cairo Univ.

5.5.4 Subscription to International Digital Periodicals

Some HEEPf financed projects subscribed to some specialized periodicals that are not included in the Information and Communication Technology Project (ICTP). Faculties promised to continue paying the subscription fees after the end of the project contract to ensure sustainability. Digital subscription to international periodicals was done in the following projects: Project (A-060-P1) in the field of Pediatric Medicine in Suhag, Project (C-014-Q0) in the field of Medical Education in Suez Canal Univ., Project (C-066-I0) in the field of Clinical Pharmacy in the Faculty of Pharmacy, Assiut, Project (A-109-K0) for digital libraries in Helwan Univ.

5.6. Databases

In the field of establishing databases, Project (B-010-G0) in the field of Children Psychological Medicine in Ain Shams Univ. aimed at upgrading the skills and performance of young researchers, public health physicians, pediatricians, and psychologists through using the Egyptian Electronic Information Database EPIC. The database was designed for child age and divided children according to their age, geographical distribution, and sex (boys – girls). It has three stages: the first gathers information related to psychotherapy and health conditions of children; the second enters well-prepared data into the computer to be processed through Meta Analysis; the third performs Meta Analysis to rebuild these data inside a national electronic database for psychotherapy through the internet on www.asu-epic.org. Psychological disorders were the most common among the researched subjects: 7.8% for girls and 4.8% for boys.



Fig. (23) An electronic site for the program on the internet in the Childhood Institute, Ain Shams Univ.

In the same field, Project (A-083-I0) in Assiut Univ. established a database for the University equipment and technicians. Each of the University equipment was described (year of manufacture, labs that need it, times of using it, under the charge of, its efficiency, and place

....) for optimal use. In addition, a database for the technicians working in the University and their work schedule was established to use them when needed. Those technicians were trained on using and maintaining equipment through training courses or workshops. Besides, old equipment was disposed of and parts of these equipment were used in maintaining new equipment failure. In specialized fields, Project . (B-092-L) in the Medical Center for Urinary Passages, Mansoura Univ. designed a database and completed an information network connecting it to the external clinic. In addition, the software required for entering, saving, and processing radiation pictures were activated. Project . (A-011-J0) also established a database for tissue bank and pathology in the Faculty of Veterinary Medicine in Beni Suef. Besides, Project . (D-133-K0) established an Orogomic Design database in the Faculty of Applied Arts, Helwan Univ.

5.7. Training (Refer to chapter 8 on Development of Human Resources for more examples) With the spread of new technology and its fast transfer from one place to another, and in order to avoid double dealing and unify technology, administration has become a vital resource of field activities.



Fig.(5-24): Training on different computer applications in different fields

If we want to remove the obstacles of routine and inaction, the Management system has to be continually developed. This cannot take place except through training employees in the fields of facilitation, automation, planning, and analysis. It is an unquestionable fact that training plays an effective role in solving many problems that face institutions and workers on all levels. It is also unquestionable that training cannot play that role effectively and efficiently unless it is done in a well planned and studied scientific way because training is the tool of change and development. Therefore, projects held training courses in different fields starting with training on using modern equipment, passing by information system courses (Acrobat, photoshop, FrontPage, messenger Programs, html Language, Flash, Read/Write) and reaching the ICDL certificate.

5.8. Summary & Recommendations

The implementation of many projects was connected to the establishment of internal networks LAN as well as connecting computers in some staff members' offices with the internet or the library. This helped to partially revive staff members' connection with international sites and world universities to learn about the latest developments in the fields of e-learning or research. In addition, some HEEPf financed projects helped purchasing some specialized software programs which allowed many staff members, their assistants, and students to do several applications in different fields. Some specialized training centers in the fields of information and communication technology were established in national universities. They in turn upgraded the workers' skills and offered services to the surrounding community.

Moreover, some specialized centers in the field of e-learning whose role in scientific production could be activated to reach a technical level that corresponds to the world criteria. In addition, HEEPF financed projects performed tasks that were not listed in the Information and Communication Technology Project ICTP such as the establishment of electronic management systems for university hospitals, founding electronic units, in addition to the credit hour system and electronic progress, together with the establishment of specialized databases and digital libraries that have a unique scientific nature and the fields of electronic publishing. This refers to the importance of coordination and integration among the different enhancement projects to serve the integral system of higher education enhancement in Egypt.