

## A MODEL PROPOSAL FOR INSTRUCTIONAL TECHNOLOGY AND MULTIMEDIA CENTER FOR FACULTY OF EDUCATION

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### ABSTRACT

The “Canakkale Faculty of Education”, which was previously attached to Trakya (Thrace) University, became part of Canakkale Onsekiz Mart University(Turkey) when it was established in the 1992-1993 academic year. It is the largest faculty in the university. It trains teachers for the Ministry of Education. Now,in faculty,the traditional methods and media have been working in the learning and teaching processes and ,Canakkale Onsekiz Mart University,consequently, Faculty of Education,although having some technological and media possibilities, have not an instructional technology center .These centers are very important support service organizations and their primary mission is to assist faculty members in providing effective instructional activities.So,the main aim of this study is to propose a model for the establishment of an instructional technology and multimedia center for Canakkale Faculty of Education.The study,firstly,introduces instructional technology centers of some universities worldwide;determines the instructional technology applications in Turkish distance education system;explains the current status of instructional technology in faculty;then, proposes a model for the establishment of an instructional technology and multimedia center for faculty.

**Key Words:** Higher Education;Instructional Technology Center;Multimedia;Canakkale Onsekiz Mart University;Faculty of Education;Turkey.

### INTRODUCTION

Instructional technology, according to the current definition of the Association for Educational Communications and Technology (AECT) is "...the theory and practice of design, development, utilization, management and evaluation of processes and resources for learning" (Seels & Richey, 1994). In the same volume, the glossary listing for "educational technology" says "See Instructional Technology".Design,media utilization,management and evaluation are the components of the instructional technology.

Multimedia, a much-talked-about development, has begun to rekindle enthusiasm for educational technology. Multimedia, the use of a computer to "mediate" media-text, graphics, sound, and video-has the potential to transform education in the 1990s. The key to the power of multimedia is in its integration of two powerful concepts that, when joined, revolutionize information technology. The first is the computer's ability to present several media formats, separately or simultaneously, to the user. The second is the ability to provide nonlinear links within and between these media formats. As the word suggests, multimedia implies the integration of multiple information formats within a unified context. For the computer user, multimedia had its humble origins in the early efforts to combine text and graphics on a single screen and to supply relevant sounds through a computer-controlled speaker.

The uses of multimedia technology in higher education are manifold. In the humanities classroom, for example, areas for exploration include the contrasts between spoken and written texts, the relationship between literature and performance, visual reinforcement of textual analysis, and the application of analytical methods to non-text media.

Since new information technologies such as the Internet and CD-ROM promise both greater interactivity and more flexibility for learners, it is not surprising that many universities are now turning almost in desperation to these technologies as one possible solution to their increasingly pressing problems.

Multimedia technology in the future of education is a theme that dominates the recent literature of education and information technology. Title after title heralds multimedia as the educational resource of the twenty-first century. Certainly multimedia resources are increasingly embraced in elementary and secondary education. In that sector both the range of products and applications for the technology is expanding rapidly. By contrast,

higher education has not demonstrated equal enthusiasm for multimedia, but this does not necessarily mean that multimedia has little to offer (McFarland, 1996).

Although there are many definitions for instructional technology centers, The Instructional Technology Center (ITC) is a place for faculty and teaching assistants to obtain access to, assistance with, and information about technologies available to enhance their teaching and research activities. Services include a walk-in computer lab, one-on-one consultation, online resources, a reference library, and development work for instructional Web and multimedia.

Furthermore, The Instructional Technology Center (ITC) is a support service organization. Its primary mission is to assist faculty members in providing effective instructional activities. ITC instructional design and production specialists collaborate with content faculty specialists to help develop learning units and course packages for large-group, small-group, and individualized instruction. ITC specialists provide media materials, instructional development, production support, and other instructional technologies for classroom presentations.

The incorporation of technology in teaching-learning process is an important component across all areas of higher education. But, here, there are some important questions on the faculty effectively usage of instructional technology; For example, How are university faculty, who are responsible for training professionals, adopting instructional technologies and multimedia in their teaching? Which types of technologies are most favored by university faculty? What barriers to technology use do they perceive and what can facilitate adoption of newer technologies in teaching? What is the role and importance of the instructional technology centers from the point of view of technology incorporation into teaching and learning process in higher education?

In Turkey, higher education is defined as all post-secondary programs with a duration of at least two years. The system consists of universities (53 state and 19 private) and non-university institutions of higher education (police and military academies and colleges).

Canakkale Onsekiz Mart University was established on 3rd. July 1992, under Act of Parliament no. 3837. Educational activities commenced in the year it was established, with one faculty and two colleges of further education. The “Canakkale Faculty of Education”, which was previously attached to Trakya (Thrace) University, became part of Canakkale Onsekiz Mart University (Turkey) when it was established in the 1992-1993 academic year. It is the largest faculty in the university. It trains teachers for the Ministry of Education. Although, as above mentioned, they are very important media and centers for effective teaching and learning processes in higher education, now, Canakkale Onsekiz Mart University, consequently, Faculty of Education has not an instructional technology center.

The main aim of this study is to propose a model for the establishment of an instructional technology and multimedia center for Canakkale Faculty of Education.

## **INSTRUCTIONAL TECHNOLOGY CENTERS IN HIGHER EDUCATION**

There are many names for instructional technology and multimedia centers of universities Worldwide, for example; Office of Development and Technology (Western Illinois University); Multimedia Center (Mary Washington College); Multimedia Instructional Development Center (Purdue University); Instructional Design Center (Rapitan Valley Community College); Office of Instructional Technology (University Of Incornate Word). Instructional Technology Center (Iowa State University; Southhern Polytechnic State University; West Chester University; University of Cincinnati; Royal Military College; University of Texas)

Some other names for such centers are the following: Instructional Technology Student Support Center; Center for Teaching Excellence; Teaching, Learning & Technology Center; Center for the Enhancement of Learning, Teaching and Scholarship; Office of Instructional Development and Technology; Center for Instructional Development and Research.

## **REVIEW OF THE LITERATURE**

Having formulated a view of technology development and stated why it is necessary what follow is discussion of five technology faculty development models articulated by Shapiro and Cartwright (1998). These models are; faculty development centers, consortium approaches, partnerships, and statewide conferences. Faculty Development Centers provide support to faculty with facilities housed in and supported by one higher education institution.

Virginia Tech (Moore, 1998) and the Georgia University system (Gillespie, 1998) are examples of higher education institutions who have implemented full-service faculty developments centers. These two institutions

like many other large colleges and universities provide many of the technology faculty support activities outlined in the previous paragraph.

The second technology faculty development model (Shapiro & Cartwright,1998) is a Consortium. The consortium provides services to members. These services are focused on providing motivation and support to enable institutions to improve teaching and learning with technology and cope with continual change.

The Partnership is the third model for technology faculty development. Partnerships typically link technology companies with higher education institutions. In these arrangements the technology company would normally provide technology resources to the universities such as resources to build or extend network infrastructure, provide equipment for a technology lab or workshop resources such as trainers and training materials. The partnership between example Pace University and Bell Atlantic is one such example.

Another model of technology faculty development is the Toolbox. Toolboxes provide access to resources such as automated web site builders, software downloads, technology tutorials, and preformatted templates and graphic organizers. This model is often used by small colleges and universities where they are unable to support face-to-face training activities.

Higher education institutions such as the University of Georgia System and the University of Cincinnati are a few of many good examples of higher education institutions that have developed and implemented one or more of the technology faculty development models described above. The University of Cincinnati (Camblin Jr. & Steger, 2000) is an example of an institution which has shown progressive developments in providing technology faculty support. However the remaining four models play a vital role in supporting technology integration either as components of a technology faculty development center or as stand alone models developed to meet the financial and other resources constraints or as a step on the way to more comprehensive support options. The University of Central Florida has created a model faculty education program and support infrastructure that engages faculty in a recursive process of research, design, development, and assessment that leads to research-based, technology-supported, student-centered learning environments.

Some publications from Pennsylvania State University and the University of Illinois found faculty groups in agreement that "good teaching is good teaching." In other words, the guiding principles and practices related to effective teaching and learning environments apply to traditional resident instruction as well as to distance education models. The report from the University of Illinois found that moving learning environments from concrete buildings into cyberspace can be effective, if done correctly. The guidelines developed at Pennsylvania State University reiterate that regardless of where or when it is delivered, the focus on learning goals and objectives is fundamental for the instructional design, development, delivery, and evaluation of the educational event (Hains and others,2000).

Iola Peed(2003) says that computing and information technology centers, and distance learning centers provide teachers and students with access to, and training in, the use of instructional technology. They also develop useful tools for instruction, course management, and communication. The staff of these centers need to understand the course development model outlined above and all the factors that should be taken into account in effective course design. This model is far broader and more complex than the information- and artifact-exchange model that seems to predominate in instructional technology. These centers also need to learn to provide meaningful advice on the utility and feasibility of serving specific instructional needs with current services, not generic instructions about the use of their too. Iola Peed(2003),also, states that *"If teaching centers, technology centers, and faculty and students work together in this way, we will be able to identify which technology systems work best for instruction (on- and off-campus), which of the available tools to use, what new tools are needed, where the best resources are, and what factors advance (or hinder) our work"*.

Bates(2003) argues that the increasing accessibility and user-friendliness of the new multimedia information technologies promise major benefits for learners and teachers. However, he also argues that some of these technologies are still not yet sufficiently developed to be of use without substantial subsidy or support, especially for off-campus learners, and those technologies that are ready need major changes in both teaching method and institutional organisation and management for their benefits to be achieved. Finally, he suggests a number of strategies to ensure successful use: project management; instructional design; the integration of on-campus and off-campus teaching; and major changes in the way teaching is organised.

Neo and Kian(2003), focused on a course in the Faculty of Creative Multimedia, in which students used multimedia in creating a student-centered learning environment. Here, students were taught the basic multimedia

design process (MDP) and the use of an authoring tool, Macromedia Director, and then to apply the knowledge they have gained to build a multimedia project of their own choice. In this learning environment, students must play an active part in their learning process and determine how to reach their own learning outcomes themselves. This student-centered approach empowers students to construct their own knowledge and enables them to think critically, learn to work in teams and solve problems collectively. A survey was carried out to ascertain the reactions of the students towards this student-centered learning mode. In general, students responded enthusiastically to the course and demonstrated positive attitudes towards the student-centered learning environment. McFarland(1996) determines that multimedia technology in the future of education is a theme that dominates the recent literature of education and information technology. Higher education has not so far demonstrated a high degree of enthusiasm for multimedia, but this does not necessarily mean that multimedia has little to offer in this sector. McFarland(1996) suggests, to advance the use of multimedia technology, post-secondary teachers must be convinced of its relevance and practicality. Arguments, evidence, training, and facilities for multimedia instruction must be presented in forums that are accessible and convenient for the unconvinced.

In 1999-2000, the Center for Distributed Learning(CDL) developed the next generation of a web-based resource where faculty can easily find online teaching & learning materials together with evaluations and guidance for using them in teaching and learning. The virtual collection of over 3,000 learning objects, numerous technical tools and other learning resources is called the Multimedia Repository of Learning and Online Teaching (<http://www.merlot.org>).By July 2000, twenty-two other systems and institutions of higher education became paying members of the MERLOT Project.The members of MERLOT are the following: University of North Carolina;Oklahoma State Regents for Higher Education;University System of Georgia;South Dakota Board of Regents;Louisiana Board of Regents;Troy State University;University of Hawaii;State University of New York;Illinois Board of Higher Education;Virginia Community College System;University of Wisconsin System;Canadian COHERE Project (Univs of Alberta, Guelph, Waterloo, and York University);Canadian CAREO Project (Univs of Alberta and Calgary);Council of Independent Colleges and Foundation for Independent Higher Education;Indiana Commission for Higher Education;California Community College System;Tennessee Board of Regents and University of Tennessee;Iowa Board of Regents;Association of Jesuit Colleges & Universities Distance Education Network;Florida Board of Regents and Florida Community College System;Western Interstate Commission for Higher Education (representing Universities of Utah, Nevada-Las Vegas, Wyoming, Arizona State University, and the Community Colleges of Colorado);University of Michigan.

The strategic priorities of the MERLOT project are to expand the collection, to conduct and publish peer reviews of the materials, and to enrich the collection with instructions on how to use the online teaching materials to achieve learning objectives.

St-Pierre(2000)presents a proposal describing the characteristics that a modern Instructional Technology and Media Center(ITMC) should have to satisfy the teaching requirements of the professors with respect to the uses of Web and technological media in distance education.The main goal of his study is to develop a proposal for the establishment of an instructional technology and media center for distance educators who teach in the Office of Continuing Education. St-Pierre(2000)determines that the infusion of instructional technology in distance course will enhance teaching outcomes and improve the delivery of course at a distance.According to him,proper staffing and budgets are necessary elements for ITMC and, staff,professors,and students have to be properly trained to reach optimal results in the delivery of the courses.

To assess technology use by faculty,Groves and Zemel(2000) conducted an action research case study of faculty and graduate teaching assistants at one college in a large public university.Questions also addressed their perceived barriers and needs for technology adoption and use.Results indicated that in order to use technology in teaching ,respondents wanted accessible hardware,training ,and discipline specific media that is easy to use.

Laurillard(1993)in his book entitled “Rethinking University Teaching”analyses each teaching media such as audio-visual,hypermedia,interactive media,adaptive media and discursive media in higher education.He discusses effective teaching with multimedia methods in higher education.In conclusion,he declares that an organizational frastructure for educational technology in higher education must enable the system to learn about itself and higher education must be able to evolve and adapt to new conditions while preserving the traditional high standarts of an academic education.

#### **INSTRUCTIONAL TECHNOLOGY PROGRAMS IN TURKISH HIGHER EDUCATION SYSTEM**

In the 1930s and 1940s, Turkish schools mostly used printed instructional materials in conjunction with maps, laboratory equipment, and film-strip projectors. Between 1950 and 1970, schools had technologies such as audio cassettes and overhead projectors. Distance education was first introduced to students in Turkey in 1974. During

the 1970s, some new teaching materials were provided for schools and introduced to teachers. In addition, some big universities started to offer graduate programs aimed at training professionals in the field of educational technology. Though some of these traditional technologies are still in use, educational policy makers in Turkey believe that schools must give students the knowledge and the skills they will need in the future. Because of this, computers have gained more importance than any other educational technology (Akkoyunlu & Orhan, 2001).

There is a great tendency toward Web-based instruction programs in most open universities and other educational institutions. Some already have started to offer on-line degree or certificate programs. For example, Anadolu University has provided on-line self-test opportunities for its distance learners since 1998. Anadolu University has also been trying to offer some on-line alternative courses for its on-campus students in order to be able to understand how feasible, effective, efficient, and appealing it is to offer on-line programs, and established a foundation for a "virtual" university in 1998. Starting Fall 2001, the University will offer an on-line two-year on-line degree or certificate program. As with Anadolu University, some other Turkish Universities are opening on-line certificate and degree programs. Middle East Technical University (METU), for example, has several on-line certificate programs on information technology, English language, or computer skills. Like METU and Bilgi University, which are kinds of a private institutions, have been providing an on-line degree program called e-MBA for almost two years. In 1996, Bilkent University and in 2000, September 18, Istanbul University constructed the system of videoconferencing.

For example distance education is performed by Firat TV programs in Firat University, some studies are performed using e-mail and education with WWW through Internet is one of the desired aims. Besides these, there are many serious efforts at other universities such as Sakarya University to open on-line programs; however, most of these efforts are still at the idea stage of development or are limited to several on-line courses. Internet home pages become a part of daily life in most of the universities of Turkey, but there are few studies for the usage of Internet for education.

The Higher Education Council (YOK), a governmental agency, has established a committee called the National Informatics Committee (EMK). Its objectives are to facilitate academic cooperation by enabling the sharing of educational resources among universities; to increase the effectiveness of education by making use of the interactive medium provided by information technologies; and thus increase the efficiency of higher education and its accessibility to new student audiences. Beyond these, the main goal was to establish a virtual university in Turkey.

Within the framework of the reconstruction of educational faculties, "Computer" and "Instructional Technologies and Material Development" courses are part of compulsory teaching certificate courses in all teacher education departments. The aim of this new arrangement is given as follows in an HEC (Higher Education Council) report:

"It is aimed that via these courses the teacher candidates be familiar with and capable of using technologies such as computers, the Internet, multimedia, television, video, and projection equipment. It is thus anticipated that future teachers will know the technology and apply it efficiently in instructional settings" (Akkoyunlu & Orhan, 2001).

In Turkey, higher education is defined as all post-secondary programs with a duration of at least two years. The system consists of universities (53 state and 19 private) and non-university institutions of higher education (police and military academies and colleges). Each university consists of faculties and four-year schools, offering bachelor's level programs, the latter with a vocational emphasis, and two-year vocational schools offering pre-bachelor's (associate's) level programs of a strictly vocational nature. Anadolu University in Eskisehir offers two- and four-year programs through distance education. There are presently 387 bachelor's and 196 pre-bachelor's level programs operating in universities. We can say that some Turkish state universities such as Ankara University, Hacettepe University, Boğazici University, Ege University, Dokuz Eylül University, Marmara University and some private universities try hard to be successful at instructional technology and multimedia.

#### **CANAKKALE ONSEKİZ MART UNIVERSITY AND CANAKKALE FACULTY OF EDUCATION**

The university was established on 3rd. July 1992, under Act of Parliament no. 3837. Educational activities commenced in the year it was established, with one faculty and two colleges of further education. Today, activities of university involving 12295 students, 269 administrative and 591 academic personnel are carried out in 8 faculties, 2 colleges and 11 vocational colleges of further education.

The “Canakkale Faculty of Education”, which was previously attached to Trakya (Thrace) University, became part of Canakkale Onsekiz Mart University when it was established in the 1992-1993 academic year. It is the largest faculty in the university. It trains teachers for the Ministry of Education.

### **CURRENT STATUS OF INSTRUCTIONAL TECHNOLOGY AND MULTIMEDIA AT CANAKKALE FACULTY OF EDUCATION**

In this section, we will introduce current status of instructional technology and multimedia at Canakkale Faculty of Education;

#### 1) Departments Interested in the Instructional Technology

##### Department of Computer Education and Educational Technology Teaching

This department was established with the aim of educating individuals to give training for computers used in educational establishments, to prepare software and to produce teachers capable of devising and putting into practice new methods.

#### 2) Research and Training Centers

Research and training centers of faculty are the following:

Ataturk and the Gallipoli Campaign Research Centre

Canakkale Astrophysics Research Centre

Continuing Education Centre

Canakkale Ceramics Research and Training Centre

Foreign Language Teaching Training and Research Centre

#### Continuing Education Centre (CEC)

The aim of CEC is to organise courses in all areas of education and research covered by the university, programmes not covered by formal education, seminars, conferences, courses leading to completion of a degree, pedagogic training, and areas such as apprenticeship, foreign languages, computing, physical education, music and art. With these courses, it will serve the public sector, private sector and international organisations and thus make a contribution towards the development of cooperation between the university and these organisations. In accordance with its aims, CEC organises and coordinates educational programmes, national and international courses, seminars and conferences in the areas required by individuals, the public sector, the private sector and international institutions. Those who successfully take part in these activities are awarded certificates and similar documents.

#### 3) Computer Labs

Canakkale Faculty of Education has three computer labs (Lab A; Lab B; and Lab C). Total number of the computers is 74. The characteristics of the computers in each lab are the following:

##### 1) Characteristics of the Computers in Lab A

Number of Computers : 30

Processor : Pentium IV 1.5 GHz

Memory : 128 SD-RAM

Disk : 40 Gb HDD 7200 Rpm UDMA 100

Sound Card : 32 TNT2

Ethernet Card : 10/100 Mbit

CD-ROM : 52X

Screen : 15”

##### 2) Characteristics of the Computers in Lab B

Number of Computers : 22

Processor : Pentium MMX 166 Mhz

Memory : 32 Mb EDO-RAM

Disk : 2.1 Gb HDD UDMA 33

Sound Card : 2 Mb S3

Ethernet Card : 10 Mbit

Sound Card: 16 bit Ses Kartı

CD-ROM : 24X

Screen : 14”

### 3) Characteristics of the Computers in Lab C

Number of Computers : 22  
Processor : Pentium III 550 Mhz  
Memory: 64 Mb SD-RAM  
Disk :20 Gb HDD UDMA 66  
Screen Card :8 Mb S3 Trio 3D/2X  
Ethernet Card :10/100 Mbit  
Sound Card: -  
CD-ROM :52X  
Screen : 14”

### 4. Distance Education and Internet Using in Faculty

The program’s contents at the Canakkale Faculty of Education are generally related to the cognitive domain. In the classrooms the learning environment has been designed to encourage group instruction with blackboards, textbooks ,and overhead projector. Unfortunately, traditional methods and media have been used in the teaching and learning processes.

Although, now, Canakkale Faculty of Education has the possibility of Internet access (speed is 2 Mb) by an other campus (Terzioglu), university and its faculty of education in the teaching and learning processes have not been benefiting from distance education and have not been using Internet as an educational tool .

Faculty has a student and academic information system and the students have the possibility of learning the examination results by Internet. Some of the library databases on Internet are the following: ACADEMIC RESEARCH LIBRARY, ISI WEB OF SCIENCE, ERIC and PROQUEST etc.

### 5. Audio-Visual Media Using in Faculty

The A and B labs have sound card and furthermore lab A and lab C have two projectors and faculty members and students have been using these projectors in the teaching and learning processes. In the lessons in Lab B faculty members and students can benefit from a overhead and datashow projector. Some characteristics of projectors in Lab A are the following: (1200 Ansi-lümen; 800X600 normal; 1024X768 compressed dissociation). Some characteristics of projectors in Lab C are the following: ( 800 Ansi-lümen; 640X480 Normal; 800X600 compressed dissociation).

### 6. Current Staff Interested in Instructional Technology at Canakkale Faculty of Education

The current staff interested in instructional technology in Faculty are the following:

- 1 Network Manager
- 1 Media and Web Specialist
- 1 Computer Technician
- 1 System Analyst
- 5 Graduate Assistant

### A Proposal for Instructional Technology and Multimedia Center for Canakkale Faculty of Education

In this section of the study we will propose a model for the establishment of an instructional technology and multimedia center for Canakkale Faculty of Education . The components of the model are the following: 1) Mission and Services; 2) Departments; 3) Staffing; 4) Labs; 5) Classrooms.

#### 1) Mission and Services

The Instructional Technology and Multimedia Center (ITMMC) will serve as a resource for teaching and learning using current and emerging technology. The overall mission of the Instructional Technology and Multimedia Center will be to help faculty integrate instructional technology into the curriculum. This is being accomplished by providing information and training on courseware and technology and creating new courseware when appropriate.

Instructional Technology and Multimedia Center (ITMMC) will provide instructional development services to the faculty, staff and students including:

1. Instructional design and multimedia courseware development as well as arranging for their use.
2. Technology-based training for the faculty and staff at Faculty of Education.
3. Support the faculty's instructional program and facilitate the integration of technology into modern pedagogical approaches to teaching and learning.

4. Train faculty, students, and staff who support faculty in learning instructional technology tools and technique.
5. A number of services including the consulting services and WebCT services to faculty interested in using instructional technology and learning media.
6. A variety of staff development opportunities for professors teaching at a distance and improve the professors and students' skills to use the network and the Web site for distance education.
7. Flexible, interactive, and responsive distance learning environments for correspondence courses using Web and CD-ROM technology.
8. Management of the network and multimedia.
9. Consultation in the selection, use, and production of media materials for classroom instruction and for presentations to their respective professional associations.
10. Advice on the selection and purchase of media hardware.
11. Design, installation, maintenance, and repair of instructional media facilities campus-wide.
12. Production of audio-visual, and video instructional materials and programs.
13. Updating, maintenance, and repair of media hardware.
14. Information on the availability of telecourses.

## 2) Departments

The departments of the center will be as follows:

- 2.1. Instructional Design Department (IDD)
- 2.2. Technology Training Department (TTD)
- 2.3. Multimedia Instructional Development Department (MIDD)
- 2.4. Department of the Maintenance-Repair and Distribution of Equipment (DMRDE)
- 2.5. Production of Instructional Materials Department (PIMD)
- 2.6. Technical and Professional Assistance Department (TPAD)
- 2.7. Managing Department (MD)

### 2.1. Instructional Design Department (IDD)

The Center will include a hands-on area where faculty can preview learning packages, learn about software and hardware, and work on projects. Three faculty workstations will be equipped with multimedia Pentium computers, a scanner, videodisc player, and VCR. The IDD also will include a resource area where a variety of software packages, resource files, and discipline specific multimedia catalogs will be available for faculty use.

The Instructional Design Department will provide the following services to assist faculty in designing, developing, and revising instruction for courses:

1. Consulting in the methods and procedures for presenting a particular course topic based on:
  - Instructional design models
  - Instructional theory
  - Learning theory
  - Communication theory
2. Searching for available multimedia programs to supplement the curriculum including:
  - Software on floppy disc or CD-ROM
  - Videotapes/Laserdiscs
  - Multimedia packages
3. Providing individual instruction and group workshops in using:
  - CATT (Centers for Advanced Teaching and Technology) Rooms and portable AV equipment
  - Presentation software - to develop class presentations
  - Authoring software - to develop Computer Aided Instruction (CAI)
  - Web page development Software - to develop Web pages
  - E-mail, distribution lists, listservs, and newsgroups
  - Search engines - to search the World Wide Web for additional course materials
  - Specific software and methods to incorporate clip art, photographs, sound, and/or video into multimedia projects
4. Assisting in the:
  - Development of presentations
  - Development of individualized Computer Aided Instructional programs (CAI)
  - Development of World Wide Web pages containing supplemental instruction and course information
  - Integration of multimedia programs into the curriculum
  - Creation of a WebCT online course

Six targeted technologies will be designed by IDD as follows:

1. Computer productivity (ways using a computer can make your job as a professor more efficient and satisfying, such as word processing, databases, spreadsheets, graphics, evaluation of educational software, etc.)
2. Interactive multimedia (review of existing titles or development of new ones)
3. Telecommunications (Using the Internet, email, and list servers, etc. to enhance teaching and learning)
4. Instructional video (in-class usage and video editing for/with students)
5. Distance education (adapting courses and visuals for teaching via satellite or on our compressed video network)
6. Instructional design (decision-making in a technology-rich environment, graphics).

#### 2.2. Technology Training Department(TTD)

This department will provide a place for technology-based training for the faculty and staff at Canakkale Faculty of Education. Secondly, the TTD will be available by reservation for faculty to introduce their students to technology-based instruction.

The TTD will support the faculty's instructional program and facilitate the integration of technology into modern pedagogical approaches to teaching and learning. It also will provide support to administrative functions of the faculty. Furthermore, TTD will train faculty, students, and staff who will support faculty in learning instructional technology tools and technique.

#### 2.3. Multimedia Instructional Development Department(MIDD)

MIDD will provide a number of services to faculty interested in using instructional technology and learning media. These will include the consulting services and WebCT services;

##### 2.3.1. Consulting Services

MIDD staff will provide personal consultation for instructors interested in using multimedia technology in teaching. MIDD will provide consulting support for faculty and courseware development to departments and programs in faculty and administrative units. Furthermore, MIDD will consult with faculty, students, and staff via e-mail, phone, and by appointment on topics ranging from Blackboard and WebCT .

MIDD will assist faculty in:

- \*Adapting their courses to distance education and interactive television
- \*Generating ideas for implementing technology experiences into classes
- \*Formulating plans for developing technology products (CDROMS, electronic presentations, software reviews for instruction, etc.)
- \*Writing technology requests for grant proposals
- \*Evaluating technology-related activities
- \*Designing ways to involve students in active learning(with/without technology).

##### 2.3.2. WebCT Services

MIDD will support WebCT, a system that will allow instructors to build online courses, to supplement their existing courses through the distribution of online materials, or to provide distance education courses.

MIDD will exist to support and encourage educators to use efficiently and effectively technology to improve instruction in distance courses MIDD will accomplish its mission by informing faculty with Web information sessions and training programs; supporting distance educators by identifying the best technological media to be used in the delivery of the course.

#### 2.4. Department of the Maintenance-Repair and Distribution of Equipment (DMRDE)

The responsibilities of this department will be as follows:

- (a) maintenance and repair of all the Faculty audiovisual and video equipment;
- (b) maintenance, repair, and installation of instructional media facilities;
- (c) audio and video post-production, and media production laboratory, and
- (d) distribution of AV and video equipment to classrooms, and Faculty functions.

#### 2.5. Production of Instructional Materials Department(PIMD)

This department will handle faculty, staff, and students' requests for production of instructional materials. It will staff by two media coordinators, and a TV Operations Supervisor, who report to the Media Center director, a graphic artist who reports to the media coordinator primarily responsible for graphic production; and a video production coordinator. Materials produced by the department will include graphics, projected visuals, computer graphics, photographs, charts (for publications and display), instructional video, and broadcast video.

### 2.6. Technical and Professional Assistance Department (TPAD)

The responsibilities of this department will be as follows:

- (a) assist the faculty in the design and planning of media/communications courses,
- (b) advise in the selection/purchase of AV equipment and the installation of media facilities,
- (c) assist in the selection and use of instructional media materials,
- (d) review proposed grants involving media components,
- (e) provide technical assistance to faculty and students in communications and media courses,
- (f) negotiate internship positions with media/communications production companies and institutions,
- (g) publish a quarterly newsletter on instructional technology for faculty and staff, and
- (h) provide leadership in applications of telecommunications technology in faculty teaching.

### 2.7. Managing Department(MD)

The responsibility of this department will be to manage the implementations of multimedia, network, Web, videoconferencing and programming for the center. The department also will manage the Web server, FTP server and Conference chat server and it will support for classes taught at remote sites.

### 3) Staffing

The staff which will be commissioned in the center and their responsibilities will be as follows:

#### 3.1. Director of the Center

- \*Planning and budgeting
- \*Co-ordination
- \*Monitoring and performance evaluation of the ITC
- \*Staffing

#### 3.2. Managers

##### Network Manager

- \*Network implementation and programming for the center
- \*Web server, FTP server and Conference chat server for the center
- \*Videoconferencing management (a videoconferencing room will be already set up for distance education)
- \*Web authoring tool implementation such as WebCT.
- \*Clients support at remote (each professor and student will install the necessary software to be able to communicate with the Web server and the chat server, and to access the course materials)
- \*Support for classes taught at remote sites
- \*Network management
- \*Monitoring of the servers

Classroom Services Manager and Instructional Development Manager will be other managers of the center.

#### 3.3. Media and Web Specialist

The responsibilities of the Media and Web Specialist will be as follows:

- \*Media needs assessment and planning
- \*Media development, implementation and selection
- \*Web site development and implementation
- \*Training on the use of the media
- \*Web courses development on CD-ROM for students who do not have access to the Internet .

#### 3.4. Instructional Technology Designer

The responsibilities of the Instructional Technology Designer will be as follows:

- \*Development of distance courses using a Web approach in collaboration with the faculty members
- \*Instructional design for distance courses
- \*Development of teaching tools for course support such as Online Quiz, Web bulletin board, Online assignments with solutions, Web course materials, etc. in collaboration with the faculty member
- \*Training on the use of these teaching tools
- \*Preparation of the documentation online (help function) giving instructions about the uses of educational tools for distance courses
- \*Identifying and implementing a variety of support services that meet the needs of a diverse faculty in terms of learning styles, technology experience, available time, and interests
- \*Inspiring all to be the best they can be and to try new strategies for teaching and learning
- \*Fostering graduate students' growth in confidence and experience by providing appropriate amounts of training and freedom, and by serving as a positive role model

The Instructional Technology Designer should be a "light, not a judge" and should be an empathic communicator who seeks first to understand and then to collaboratively develop innovative, practical solutions to the educational problem or opportunity presented .

### 3.5. Multimedia Technician

A Multimedia Technician will assist the faculty and staff in utilizing the various multimedia equipment and software that is available on campus, such as creating CDs, scanning pictures or graphics, or incorporating video into computer presentations. In addition to helping faculty members in using such technology, this technician also will support the campus community by: Setting up and maintaining the multimedia and presentation classrooms which are located across campus; setting up and maintaining the Center lab; and assisting the technicians in supporting the general campus computing community.

### 3.6. Instructional Technology Consultant

Instructional Technology Consultant for the ITC will coordinate incoming faculty projects. He/ She will also be available to assist with use of ITC hardware and software. He/She will work in conjunction with other staff to complete faculty projects.

### 3.7. System Analysts

The responsibilities of the system analyst will be as follows:

1. Establish format and technical requirements for Data Element Dictionary, Rate Card, and Codes,
2. Review and critique data elements, Rate Card, Codes and definitions. Integrate codes into the data base.
3. Select a suitable database management system. Design all forms, establish form relationships, and prepare reports,
4. Prepare and test all required reports,
5. Prepare system documentation,
6. Train Media Center staff.

Programmer, training specialist and student assistants are the other staff which will be commissioned in the Center.

## 4. Labs of Instructional Technology and Multimedia Center

The labs and their equipments required for Instructional Technology and Multimedia Center (ITMMC) will be as follows:

### 4.1. Multimedia Lab

This lab facilities will allow instructors to employ a wide range of multimedia materials for CD, DVD, or Web distribution. The lab will be open from 8:00 to 5:00 and it will offer a variety of computer-based resources for hands-on use by the faculty. These resources will include Macintosh and Windows computers, each with a wide range of creative software applications, slide and flatbed scanners, color and black and white printers, video and digital still cameras with copystand, video dubbing/editing equipment, and CD-R recording. Multimedia lab that can be scheduled for individual class sessions or for the entire semester. Lab users will have access different software products available on Mac, PC, and UNIX platforms.

### 4.2. Multimedia Authoring Lab

As an open access facility, all students on campus will be able to use multimedia authoring lab for a variety of projects. This unique space will allow students to use authoring software such as Photoshop, PageMaker, MS Office, FrontPage, and Freehand, as well as scanners and video capture equipment.

This lab will feature an instructor station, projection system, 16 computer stations, scanners and printers. The lab comfortably will accommodate 16 students, but can hold up to 32 students if they "double-up" and work together on the computer stations.

### Equipment and Software for Lab

- \*Digital Camera
- \*Digital Camcorder
- \*Digital Video Camera for online videoconferencing
- \*Graphire drawing tablet and pen (for digital signatures)

The needed kind of software for lab will be as follows: Movie for digital video editing, Adobe Photo Deluxe Business Edition 1.0, Adobe Photoshop 5.5, Adobe Acrobat 4.0, Adobe Image Ready 2.0, Adobe Illustrator 9.0, Adobe Page Mill 3.0, Adaptec Direct CD Creator 3.0, MS Front Page 2000, TextBridge Pro Millennium, MS

Office 97, MS Front Page 2000, MS Office 97, Macromedia: Dreamweaver 3, Fireworks 3, Freehand 9, Flash 5, and Generator 2, PrintShop Press Writer 1.5.

## 5. Classrooms

The classrooms in the Center and their services and functions will be as follows:

### 5.1. Multimedia/Presentation Rooms

These classrooms will provide audio and video support for faculty and staff of the university as well as many university organizations and functions. The services offered by multimedia/presentation rooms will be as follows: Sound Systems, Sound Recording/Mastering, Video Duplication, Video On-Site, On-Campus, Video Feed, Satellite Downlink, Distance Learning Center, Editing Assistance

### 5.2. Multipurpose Classroom

The focus of multipurpose classroom will be provide students in teacher education with the necessary setting in which to train them to interact successfully in a technology-based and group learning environment. Therefore, this multipurpose-purpose classroom will need to satisfy several demands. First of all, it should have the flexibility to engage a variety of instructional methods. Secondly, it should not only include the necessary equipment for multimedia presentation but also provide access to Internet for student group information retrieving. Finally, it should sustain facility for microteaching since video portfolios produced in the classroom using camcorders and simple editing is emerging as a viable way to enhance presentation skill and to assess student learning and achievement.

This multipurpose room will serve a lot of instructional purposes. It is ideal to conduct teleconferencing, training, graduate seminars, workshop, and conferences with education. All chairs and tables can be moved to the storage room for games or other activities. It also will provide with videotaping and telecommunications equipment. The room will also be used in the noon times, evenings and weekends for seminars, panel discussions, faculty development programs and other special events.

The functions of this classroom will be as follows: Multimedia presentation; microteaching( real time video recording when student is teaching); conference meeting, such as panel discussion, interview, etc. Internet searching for group assignment; Videoconference (one way video, two way audio).

### 5.3. Distance Learning Classroom

The distance learning classroom will utilize two-way interactive television and a satellite-based university network over a cable television system. This system will bring learning on television for faculty students at home or other campus. Many of the teleconferences will be live call-in programs, which will encourage off campus student participation. The equipment needed for two way television and satellite broadcasting will include: video cameras, desk mounted microphones and television monitors, modulators and transmitters, telephone, television and interface equipment.

This classroom will serve students who desire to complete an internship or serve an apprenticeship in a distance learning environment and it will also be use as a vehicle by which students learn to use the technologies.

### 5.4. Computer Classroom

The computer classroom will house 30 computers. They will connected to a server in another location in the same building and a LAN. Basic applications such as Windows 95, MS Word, Excel, and other software will be administered from the server. To learn application software such as Powerpoint, Word, or Photoshop, teacher's step by step instruction and monitoring will be required. This classroom will also be useful for inservice training, support classes and courses on the use of technology.

Ultimately these rooms will be equipped with multimedia workstations for faculty and student use. also, this classroom will be designed to teach students to use e-mail technologies to retrieve information. The methods which will be used in this classroom as follows: Step by step instruction, peer learning, software demonstration, computer presentation. The some required media and equipment for the computer classroom will be as follows: Scanners, color printers, closed-circuit equipment, video camera, wireless remote controller, 3-gun projector 30 Pentium-133 32/1.2 computers with CD-ROM drives, sound cards and video boards, laser printer, scanners, digital camera, voice recognition system, digitizer pad.

### 5.5. Smart Classrooms

These classrooms will be designed to enhance teaching and learning by infusing instructional technology resources and multimedia applications into the classroom. These rooms may be scheduled for regular faculty classes (all classes or periodic classes through semester), presentations, or meetings by faculty members.

The first priority for smart classroom use will be academic credit instruction. Other activities scheduled in the room may be moved if the rooms are needed as a smart classrooms for academic credit classes

The kinds of the smart classrooms will be as follows: Presentation Smart Classroom, Computer Smart Classroom, and Seminar Smart Classroom.

The required equipment for these classrooms will be as follows: White board, computer, projectors, document cameras; laser disk players, TV monitors (for presentation classes), VCR, projection smart boards (rear projection smart boards for presentation classes), stage microphones; and student computer workstations.

## CONCLUSION AND SUGGESTIONS

The incorporation of technology in teaching-learning process is an important component across all areas of higher education. The instructional technology centers provide teachers and students with access to, and training in, the use of instructional technology. The literature and applications about the instructional technologies and multimedia centers in higher education show that these centers are, also, support service organizations and their primary mission is to assist faculty members, which must take the responsibility for what and how their students learn, in providing effective instructional activities. If instructional technology centers and faculty and students work together, we will be able to identify which technology systems work best for instruction (on- and off-campus), which of the available tools to use, what new tools are needed, where the best resources are.

Now, neither Canakkale Onsekiz Mart University, consequently, nor Faculty of Education, although having some technological and media possibilities, have an instructional technology center and now, in faculty, the traditional methods and media have been used in the learning and teaching processes. But, if we take into consideration the truth of that higher education must evolve and adapt to new conditions while preserving the traditional high standards of an academic education, faculty must seek the ways of constructing an instructional technology and multimedia center as proposed in this article.

Budget is necessary and very important element to ensure that the center will meet its goals and objectives and to support effectively and efficiently the use of instructional technology in the teaching and learning process. Like other public universities in Turkey, Canakkale Onsekiz Mart University and its branch, Canakkale Faculty of Education are financed by the government. The salaries of all academicians and administrators are paid through government funds. The revenue of the university comes from government allocations, foundation income and student fees. Although the percentage from each of these areas can vary from year to year, the majority of the income comes from the government and incomes are not sufficient for investments and expenditures for instructional technology and multimedia. So, faculty must seek the ways of using effectively of the current resources and media and faculty's budget must be increased to provide good institutional support for its members and students.

Proper staffing is an other necessary and very important element to ensure that the Center will meet its goals and objectives and to support effectively and efficiently the use of instructional technology in the teaching and learning process, so, the faculty members and students have to be properly trained to reach optimal results in the applications of instructional technology and multimedia.

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