IMPLEMENTING A TERMINAL CONTROL SYSTEM FOR CLASSROOM INSTRUCTION

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MAY 2005

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Chapter 1

INTRODUCTION

1.1 Background of the study

Romo and Brinson (1980) state that much of our learning in the classroom is through visual aid media; teachers should capitalize on students' learning ability to learn with the help of visual aids. [1] Baltazar (1995) believes that instructional media helps the students master the lesson.[2] The primary aim in the creation of visual aids is to make use of the least number of materials within a limited time to present the concept simply and clearly.

Instructional media facilitate changes in attitude and behavior. They not only induce greater acquisition and longer retention of factual information but they also stimulate interest in voluntary reading. The instructional media repertoire is replete with motivational assistance. Gregorio (1983) cites the importance of audio-visual aids as motivation that vitalizes teaching and learning. It cannot be denied that the introduction of audio-visual

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[1] Richard Romo and Boone Brinson, "How to Use your Own Visual Delights" (Mary Glasgow Publishing, Massachuttes, 1980), 159

[2] Baltazar, James S., "Using Instructional Media"(Litton Educational Publishing, Inc., 1995), 185

devices into class work and the use of these various kinds of illustrative materials make class work more interesting and enjoyable.

Terminal Control System (TCS) is an instructional aid that assists the teacher during his/her lecture; this also meets the demand for instructional materials in a Computer Center because it offers the availability of the demo screen, overhead projector, and the multimedia projector. A computer laboratory usually consists of 36-40 stations or computer units. Making use of these stations or maximizing the use of these computers is a great help for the teachers, personnel, and for the students who are the primary users of the system.

The Terminal Control System (TCS) disables the window keys such as Control key plus Delete key (ctrl+alt+del), Alt key plus Tab key (alt+tab), Control key plus Escape key (ctrl+esc), Control key plus Break (ctrl + break), Alt key plus Function 4 (alt + F4); it capture the screen of the server computer to be viewed at the clients' computer. Once the system activates the server, it has full control of all the client computers.

The Terminal Control System (TCS) is composed of Database Storage, Administrator Servers Screen, and the Users Servers Screen. The Database Storage offers the administrator or instructor a file where he can add, update, delete, and refresh UserID, UserName, Password, Name, and Position. The Administrator Screen has the following components: Start, Stop, Snapshot, ChatOn, Unlock, Password Manager, and Close. The Start component allows the administrator to issue a command for the client/s to start capturing the administrator screen, whereas Stop component allows the administrator to issue a command for the client to stop capturing the administrator screen. The Snapshot freezes the entire client/s displaying the last screen captured; the ChatOn allows the client/s to send messages to all active workstations or exclusively to the server; the Unlock, once pressed disables all the windows keys; the Password Manager enables the administrator to perform changes on the Database Storage; and the Close Button enables the server to close the window. The Users Servers Screen activates when a non-administrator password whose components are similar with those of the Administrator screen is used except for the password manager, since users have no authority to perform changes on the Database Storage.

Computers are aids to the teaching-learning experiences in the classrooms or laboratories. This is reiterated in Director Enerson's research where most of his respondents experimenting on the use of computer found this as an effective aid to teaching and learning in a variety of instructional contexts.

1.2 System Objectives

1.2.1 General Objectives

The study aimed to implement the Terminal Control System for classroom instructions.

1.2.2 Specific Objectives

In order to accomplish the general objective, these specific objectives must be done:

1. the system's server should have the capability to control the rest of the active workstations/terminals;
2. the system's server should capture the image from the desktop;
3. the system's server should also act as the client terminal;
4. the system's client should receive the command to retrieve the server's screen;
5. the system's client should send messages to the server or to everyone through the message box; and

6. the system's client should have the capability to be a server.

1.3 Significance of the Study

The Terminal Control System is beneficial to the following:

It helps the institution uphold the quality of education for students and lessens the expenses towards multimedia technologies and their maintenance.

It motivates the students to listen and focus on the discussion for better and enhanced learning experiences.

The system is accessible for the teachers since it is available in the Computer Center. It is an ideal aid or tool for teaching for it answers their need of instructional media during the lecture and encourages the student to listen. Likewise, it helps the teacher control the classroom, maximize the time for discussion, and develop an interaction between students and teacher via the computer.

This system utilizes the use of computers at the Computer Center and minimizes the maintenance of some instructional media. It also enables the Computer Center to accommodate the need for instructional tools.

1.4 Scope and Limitations of the Study

The Terminal Control System as a tool for classroom instructions is intended for the Computer Center of Notre Dame of Dadiangas College. It is designed for the students and teachers who use the computer laboratory. The instructor has the authority to activate the system; therefore, s/he is required to register his/her login name and password to the database. This window is used by the Administrator to determine the current user name and password of the different users. The administrator can delete and add the instructor's login name and modifies the password if the instructor wishes to change his/her password. The login name is viewed on the database where only the administrator has access.

The Terminal Control system has two subprograms. The first subprogram is for the server and the second sub-program is for the client computers. The server computer controls its clients, meaning that all images shown on the server's screen are also shown on the client's screen. Once the system is in full operation the window keys are disabled to hinder the students to manipulate the screen and focus on the presentation displayed on their respective screens. Thus, client computers are used for viewing purposes. When the server activates the message box, the clients send questions directed to the server or to all active workstations.

The server receives the messages and replies to the questions orally. This is to develop interaction between them.

Sending of data or images from the server is limited on the active workstations within the room, since they are only the stations recognized by the server registered on the network neighborhood. The system is limited on Windows 95 and Windows 98 platforms and could only capture standard Windows-based applications, thus, applications running in DOS mode is a limitation of the system.

1.5 Definition of Terms

Client Computer. This is the computer that functions as a workstation requesting information from one or more servers.

Host. In terminal/Mainframe or terminal/Minicomputer types of communication, a host is the Mainframe computer of the Minicomputer. When the term host is used in a TCP/IP network, a host is any device computer or otherwise, that has an IP address.

ICMP (Internet Control Message Protocol). Network-layer Internet Protocol provides message packets to report errors

and other information regarding IP packet processing back to the source.

Internet Protocol (IP). It provides a connectionless routing service responsible for packet fragmentation and reassembly, routing, and data encapsulation.

LAN (Local Area Network). It is a network designed to share data and resources among general computers.

Network. It is a collection of data communication hardware, computers, and communications software. Communication media and application software are connected so that the users can share information and equipment.

Network Address. It is a hexadecimal number used to identify a network cabling system.

Network Interface Card (NIC). This provides the interface to the network for the workstations, personal computers, and MAC's

Packet. It consists of a discrete unit of data bits transmitted over a network.

Port Address. The memory address in the local PC's is utilized for communication with the central processing unit.

Protocol. It is a set of rules for the exchange of data between a terminal and a computer or between two computers.

Server Computer. It is the computer that functions as the file server for a network.

Sockets. This is the name given to the package of subroutines that provide access to TCP/IP on most systems.

Star Networks. Electronic communications network with a central unit (computer or file server) linked to a number of smaller computers and/or terminals (called nodes). The central unit acts as traffic controller for all nodes and control communications to locations outside the network.

TCP (Transmission Control Protocol. This is responsible for verifying the correct delivery of data from client to server. Data can be lost in the intermediate network. TCP adds support to detect errors or lost data and to trigger retransmission until the data is correctly and completely received.

TCP/IP (Transmission Control Protocol/Internet Protocol. It is a *de facto* standard for internet work communications which serves as the transport protocol for the Internet, enabling millions of computers to communicate globally.

Terminal. It consists of an input device and an output device, and a communications link to the main terminal.

Terminal Control System. This refers to the system once activated the computers as well as the keyboard and mouse.

Terminal Server. A network device used to connect multiple terminals or other remote devices to a network.

UDP (User Datagram Protocol. It provides connectionless communication among application programs. It allows one machine to send datagrams to programs on other machines and to receive replies.