

Chapter XIV

Access Grid

Introduction

Videoconference has been used for interactions between students and teachers in distance education for many years. The newer technology, video chat, a computer-based technology that has evolved from instant messaging, appears to be displacing videoconference due to its low cost and ease of use. Access Grid is a similar technology in that like the other two it is based on two-way audio and video communications. Since its inception in the mid-1990s, the Access Grid has been used by researchers and it is not surprising that usage levels in teaching and learning are increasing as many researchers are teachers and see its potential to bring media-rich interactions to e-learning.

Definition

The Access Grid is a computer-based, high-bandwidth video and audio communications technology. It is differentiated from videoconference and video chat by

several features. Firstly, the media richness of the environment, which is produced by multi-projector displays of multiple video and data streams. Secondly, multiple cameras capture multiple images of the local participants for transmission. Thirdly, integrated with the Access Grid software are a number of other software modules designed for application and file sharing. If it is assumed that online learning technologies are evolving in a similar direction to other online technologies, then it is reasonable to expect that interactions will increase and that the preferred media for them will change. It is expected that they will move from the solely text-based technologies of e-mail, chat, and discussion forums to media-rich technologies similar to video chat. Of course the text-based communications technologies will remain, just as most superseded technologies usually remain. Often they are used for different purposes and often the usage levels change. It is expected that video chat and Access Grid will both be used in distance education and e-learning for media-rich communications and interactions.

Description of the Access Grid

The Access Grid Experience

There are two basically different types of installation of the Access Grid, room-based nodes, and personal interfaces to the grid or PIGs. To experience the Access Grid in a room-based node is to sit in a room with other participants (perhaps one or two or up to 50). The lighting in the room will have been configured to light the participants without spilling to a large degree onto the large screen that runs the length of the front wall. Usually three projectors are used to create a wall of video on this screen with many windows. The windows may contain images of participants at other room-based nodes, shared files, and shared applications. Cameras are located around the room. Generally mounted to the walls or ceiling there can be three or four cameras to capture images of the participants in the room and perhaps a document camera. An example of a room layout is shown in Figure 14.1. The voices of the participants at other nodes on the Access Grid can be heard clearly through the loudspeakers in the room and microphones on the tables or desks in the room capture the voices of local participants. Echo canceling and noise filtering technology is located in the equipment rack to ensure the high quality of the audio transmitted and received. Also in the rack is the computer (or computers) that form the basis of the node. To experience the Access Grid in a room-based node is to experience the full multimedia potential of the Access Grid. However, if a room-based node is not available or not affordable, an alternative is to use a PIG.

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