Dubbed as the next “Killer Application” (Hanss, 2001), digital video’s anticipated impact on computer networks is enormous. Few other applications are so severely impacted by networks incapable of delivering quality of service guarantees for the latency and delay with which video stations receive information packets. The goal of this chapter is to briefly discuss the teaching and research uses of video materials in academic environments, inform librarians of the various forms into which video materials may be encoded, the strengths and weaknesses of the media formats, and to argue for a comprehensive implementation plan when considering the distribution of video resources. We will conclude the chapter with an illustration of how one academic library employed database technology to create a video card catalog accessible from the Internet.

ENHANCING THE ACADEMIC ENVIRONS OF RESEARCH AND TEACHING

Video resources have always served as significant enhancements to the classroom as a way of broadening the experience of the student in lieu of expensive or impossible field trips. Early exposure to such experiences can spark a lifelong interest in learning and exploration and can have inestimable value. Digital video is
a relative newcomer to multimedia and presents great promise to educators as a vehicle to present existing materials to large numbers of students at disparate locations, create linkages between video and textual materials in a “real-time collage” of information, and stimulate face to face conversations with students hundreds (or perhaps thousands) of miles away. Psychologists and human factors specialists are interested in the subtle nuances of human interaction over video-enhanced communication to make it more natural and desirable than telephone communications.

Few educators are aware of what tools are often available to them to enhance their teaching and research endeavors. Fewer still are aware of the subtleties involved in selecting the best one for the job or the numerous options each possesses that may dramatically enhance the learning experience of the student. For example, streaming audio technology is used extensively in support of classroom teaching due to the relative ease with which low bandwidth signals are propagated through the Internet (Furr, 2001). Low bandwidth digital video technologies (multiple still images) have also been used successfully (Michelich, 2002) over slow speed modem connections, serving as highly useful adjuncts to classroom learning. The creation and distribution of streaming video is a considerably more complicated process than the transmission of multiple still images. We will begin with a discussion of the major video formats currently supported.

**MEDIA FORMATS**

The choice of digital media format is perhaps the most salient factor in obtaining acceptable digital video products for use in the library. Information specialists should not enter into this decision lightly, since their choice may likely determine if the project can be accomplished within budget, will be widely or narrowly available to the public, or of sufficient quality that viewers will find it appealing. A format that delivers only 15 frames per second is well suited for the proverbial “talking head” but is poorly suited to action sequences where camera angles and subjects’ locations change rapidly. Viewers seldom watch an unattractive presentation, resulting in a waste of resources except as a training exercise on what not to do.

While it is beyond the scope of this chapter to discuss the finer artistic points of video production, it is paramount that academic librarians consult with professionals from their campus television station, distance education departments, or multimedia centers for assistance in their video production. The subtle nuances created by proper lighting, acoustics, camera angles, set design, and tightly written dialogue and continuity can readily make or break a video production and can scarcely be understated in terms of their importance. A high-quality production of dry content may be seldom viewed, while a compelling and moving video may be
Virtual Magnifier-Based Image Resolution Enhancement
www.igi-global.com/article/virtual-magnifier-based-image-resolution/51653?camid=4v1a