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Teleducation : Opportunities for Expanding Educational Access in the Developing World through Real-Time Interactive Virtual Classes

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The Internet is a truly distributed public medium and, as such, holds great potential for disseminating information, instructing students, and bridging intellectual and cultural divides around the world. To date, much of the work to use the Internet as a mechanism for expanding educational opportunities has focused on student paced, time indifferent (i.e., 24 hours a day), instructor independent distance learning materials. However, the technology now exists for real-time, interactive instruction over great spatial distances, as evidenced by our pilot program which offered a *Seminar in the Ecology of African Savannas* to students at three universities, separated by an ocean and six/seven time zones during the 2001-2002 academic year. We have shown that while distance learning offers opportunities for educational exchanges, real-time teleducation can be used to expand resources for a more personalized classroom environment, allowing for spontaneous exchange between instructor and student. In a pilot project to evaluate this type of linkage on a more rigorous basis, we have been offering a real-time, interactive Advanced Calculus classes to three separate high schools that met virtually with a regularly scheduled class at the University of Virginia. To our knowledge, this effort is the first multipoint use of the Polycom technology between a university and local high schools. With varying degrees of success, we utilized different strategies for the linkages that combined ISDN and broadband internet connectivity to facilitate the lectures and real time discussions between instructors, university students, and high school students at the four sites. Although numerous technical, logistical, and peda-

gogical issues—both expected and unexpected—arose, the project can be viewed as overwhelmingly successful and certainly serves as proof-of-concept for future initiatives, both internationally and locally. The results of our experiences should help to prepare other students, faculty, and institutions interested in establishing or developing international education initiatives. By virtue of our 2001-2002 real-time virtual seminars with students and faculty in southern Africa, and our ongoing efforts to offer virtual courses for credit to multiple sites throughout Virginia, we believe that teleducation clearly provides a mechanism for cost effectively offering personalized pedagogical resources and expertise to remote and underfunded regions in the developing world.

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