

RapidUsers

Digital Rapids' StreamZHD and TouchStream Encoders Enable Live and On-Demand HD Video for Innovative Dental Education Portal

The User

1MediaProduction,
Naples, Florida

The Challenge

encoding live and on-demand content for high-definition video learning platform for dental professionals

The Solutions

StreamZHD and TouchStream

"Digital Rapids encoding systems enabled us to realize our vision of bringing dental education to the Web in high definition."



Florida-based live event and digital media production company 1MediaProduction (www.1MediaProduction.com) is using high definition encoding and streaming technology from Digital Rapids to power the only interactive, full-screen HD video learning platform for the dental profession, DentalEDU.tv (www.dentaledu.tv). The

vision for DentalEDU.tv came from Dr. Bradley J. Engle, D.M.D., M.H.S. A Clinical Associate Professor at the Medical University of South Carolina, Dr. Engle had been producing educational DVDs from videotaped surgical procedures. Realizing the potential of high-definition streaming for web-based education, Dr. Engle set out to create such a website, initially built on his teachings. With partner Emanuel Boeck, Dr. Engle developed the DentalEDU.tv site, with live and on-demand HD video course offerings powered by Digital Rapids' StreamZHD and TouchStream encoding and streaming solutions.

Users of DentalEDU.tv can earn Continuing Education credits through the courses. DentalEDU.tv is designated as an Approved PACE (Program Approval for Continuing Education) Program Provider by the Academy of General Dentistry, and an American Dental Association Continuing Education Recognition Program (ADA CERP) recognized provider. As of February 2010, the site offers over 100 on-demand courses from over 50 content providers (with both numbers rapidly growing), with live courses presented up to once per week. DentalEDU.tv has close to 500 professional dental users (also as of February 2010), with the user base growing quickly through both awareness of its high-quality offerings and through syndication of its content.

1MediaProduction's first Digital Rapids system, a StreamZHD studio encoding system purchased through Digital Rapids reseller Trock Media (www.trockmedia.com), was the key technology that enabled them to bring top-quality HD video to the Web. Boeck discovered StreamZHD while researching live and on-demand HD encoding systems, and has been pleased with his choice. "It's all-around very good, and has kept its promises. It's stable, logical, and easy to configure," he notes.



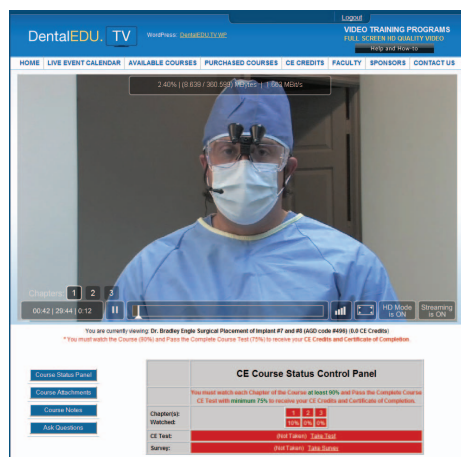
Above: Dr. Bradley J. Engle

DentalEDU.tv's production workflow begins with three Canon XL-H1 camcorders with HD-SDI output. Live green-screen capabilities in 1MediaProduction's studio enable real-time compositing, a considerable time-savings over post-production green-screen rendering given the two to three hour length of many of their productions. HD-SDI output from a production switcher provides the live input source for the StreamZHD encoder, which also transcodes existing QuickTime media files from Final Cut Pro for on-demand content. Encoded outputs are delivered in the H.264 compression format for playback through DentalEDU.tv's Adobe Flash powered video player. On-demand content is delivered at full 1280x720 HD resolution, 30fps at 1.5Mbps bitrate, as well as a lower-bitrate variant at 720x405 resolution for users with slower connections. Live courses are also available at 800x450 resolution and 800kbps bitrate, with lower resolutions and bitrates used for international distribution and syndication as required. Live events are also simultaneously encoded and streamed – all in the same system – for delivery to BlackBerry mobile devices.



Above: Emanuel Boeck

The success of DentalEDU.tv and 1MediaProduction's satisfaction with StreamZHD led to their recent purchase of a second Digital Rapids solution, a TouchStream live encoding and streaming appliance with HD-SDI input. In addition to providing a second live HD streaming channel to allow users to switch between multiple streams, the portability of TouchStream gives 1MediaProduction increased flexibility in live production at remote sites.



While the exceptional, high-definition video quality alone differentiates DentalEDU.tv, the site's surrounding architecture and capabilities make it even more innovative and effective as an educational platform. The site's embedded custom video player, developed by Gunter H Schubert, Ph.D., automatically detects the viewer's bandwidth and selects the HD or lower-resolution version accordingly, with the user also able to toggle modes manually. For on-demand content, the delivery mode can be toggled between progressive download and true streaming, the latter of which enables instant seeking forward or back to any point in the video but is more quality-susceptible to significant drop-offs in the viewer's network bandwidth or playback conditions.

The player tracks the minutes of each chapter – or of the entire production in the case of a live event – that are watched by the user. Such tracking is crucial to ensure that the user is meeting the minimum requirements for certification of completion of the

course. Successful course credit also requires passing an interactive test, which is linked below the player. The video can be viewed full-screen or in a window on the site, with patent-pending "site within a site" platform technology enabling continued operation of the player's course tracking system even while in full-screen viewing mode.

"Digital Rapids encoding systems enabled us to realize our vision of bringing dental education to the Web in high definition, and as we continue to evolve the quality and sophistication of our online offerings to include live events from multiple camera angles and expanded mobile delivery such as the iPhone, the roles of TouchStream and StreamZHD in our operations will expand even further," said Dr. Engle.