

## Educational Tools in Support of the Stanford *MediaServer*

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### Abstract

Medical media resources exist in a variety of analog and digital formats. Collections are generally organized and stored by their owners, each of whom utilizes their own method of cataloging and retrieval. As faculty retire, move on, or pass away, institutions risk losing the expertise that enhances the value media. The Stanford *MediaServer* has previously been deployed to catalog, organize, and centralize management of such media collections via the World Wide Web. Educational tools have been developed on top of existing *MediaServer* infrastructure to address a range of pedagogical models, and to promote widespread adoption within the Stanford Medical School curriculum and departments. These tools include Slide Show, Export to PowerPoint, Teaching File, and e-Books. With the exception of e-Books, these tools use web-based wizards to lead the user through the steps for creating each component.

Slide Shows consist of an ordered set of images and provide the underpinning data structures for PowerPoint and Teaching File creation. Slide Shows can be assembled from any accessible media in the *MediaServer* and shared with other users of the system.

Export to PowerPoint is a utility function to address the widespread use of PowerPoint in medical education and multimedia presentation. It allows Slide Shows to be converted to PowerPoint and downloaded to the client system for offline use, easing the process of assembling media and creating a PowerPoint document. This function leverages XML Web Services and the SOAP protocol to achieve the desired outputs.

Teaching Files are used to illustrate a particular educational topic, and consist of a multi-page interface. Each page contains media and annotations specific to the educational topic at hand. Annotations are stored with the Teaching File and not with the collated media. Individual pages are assembled by choosing existing Slide Shows and further annotating the media.

E-Books are web-based books built on a particular design template provided by the *MediaServer*. Authors can integrate media from the *MediaServer* into these e-Books, which are

assembled through the use of 3<sup>rd</sup> party tools such as Macromedia Dreamweaver.

*MediaServer* resources were deployed in a gross anatomy course through the use of these tools and integration with third party applications, including a three-dimensional stereo viewing system. This pilot project was well received by the course participants and evaluation of usage data is ongoing.

These educational media tools must be further evaluated for their teaching efficacy. These tools will be evaluated with volunteer faculty contributing media and creating Slide Shows, PowerPoint documents, Teaching Files, and e-Books. These educational modules will then be used for medical school classes. Feedback will be integrated into further development of new educational tools, providing new views into the large Stanford *MediaServer* dataset.

Access rights management and security is paramount for the protection of digital media. The existing *MediaServer* security system will be enhanced to address privacy concerns, while providing faculty the flexibility to appropriately create and share educational units with their students and colleagues. Standard APIs will also be created to allow third-party developers to access the media in the *MediaServer* and deliver it through their own web-based applications.

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### References

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