

# Rapid Development of Multimedia Learning Objects

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*This poster will outline how instructors can use familiar tools to rapidly develop multimedia learning objects and will examine how these resources can be used to enhance teaching and learning.*

The Internet is increasingly becoming the standard platform for the publication and delivery of educational resources. Recent advances in technology have made delivering high quality multimedia content online a real possibility and a growing expectation amongst a technically literate student body. Traditionally, the development of this e-learning content has been a labour-intensive process, requiring a team of web designers and developers responsible for the technical development of these resources, thereby limiting its widespread adoption. However, it is now possible for instructors to use tools that they are already familiar with to easily and rapidly develop multimedia rich e-learning content and to publish it on the web with minimal technical skills and assistance.

*Using familiar tools and newer technologies, instructors can easily create interactive multimedia resources and publish them online.*

## PowerPoint as an Authoring Tool

Microsoft PowerPoint is a powerful and ubiquitous tool for presenting visual information. It has been widely used in the classroom as a presentation tool to supplement instructor-led material. The initial slideshows developed using PowerPoint were meant as a replacement to slides and overheads, however the robust feature set and ease of use led to widespread adoption and more visually rich presentations.

The features of PowerPoint that make it an ideal tool for presentations also make it well suited for the development of multimedia learning objects. The ability to add text, images, and multimedia assets combined with built-in narration are sufficient enough features to author high-quality learning objects.

*All of the elements that are needed to author a learning object such as text, images, and multimedia are standard features of PowerPoint.*

## Enhancing Presentations with Narration

Adding narration to PowerPoint is a great way to enhance a presentation and is a quick and easy way to expand upon the point-form contents of a slide or to reproduce the lecture experience. The use of narration is ideally suited for the presentation of didactic content usually delivered in a lecture.

To add narration to a slide, simply select Insert > Movies and Sounds > Record Sound... and click on the Record button to begin the narration for the current slide. Once the narration for the slide has been recorded, it is embedded within the slide and will start automatically when the presentation begins. The narration properties can be viewed by right clicking on the speaker icon located on the slide.

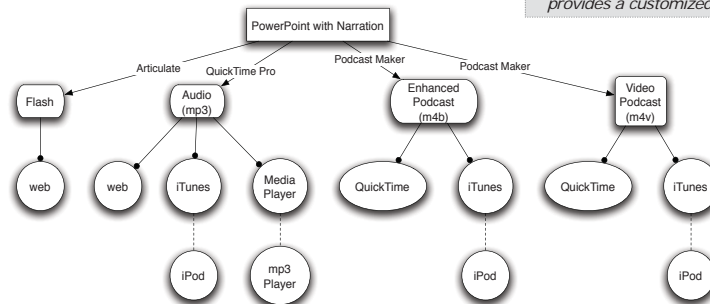
The addition of audio narration to a presentation benefits both the students and the instructor. Students benefit by having immediate access to expanded explanations of slides allowing them to review material at their own pace, such as for pre and post session review. Instructors benefit by freeing up classroom time for more interactive learning sessions to engage the students in problem-solving. The narrated resource can also be distributed, reused and even submitted to online repositories for peer review.

*Adding narration to a presentation using PowerPoint is a simple yet effective way to enhance an e-learning resource.*

## Publishing Presentations

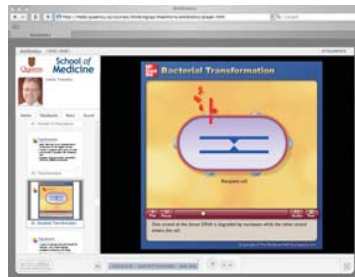
Once a presentation with narration has been created, there are several different channels by which the presentation can be distributed. With a few additional tools and some technical support, it is possible to turn a multimedia-rich learning object created using PowerPoint into a web page or a podcast.

The following diagram outlines the various different output formats that can be obtained from a single PowerPoint file with audio narration.



## Web Publishing

Although PowerPoint is a powerful authoring tool, it is lacking the publishing capabilities needed to produce e-learning content for online delivery. Articulate Presenter is a PowerPoint plug-in that provides these features in an easy-to-use manner. It is seamlessly integrated with PowerPoint, allowing users to easily enhance their presentations with audio and multimedia and to publish them to the web.



Some features of the Presenter interface include:

- Navigation controls support the learners' ability to review the material at their own pace.
- Customizable colour scheme
- Option to include the instructor's picture helps make the instructor appear more accessible to the audience.

PowerPoint files are stored in the native ".ppt" format, which poses challenges to sharing on the web. However, Presenter converts PowerPoint presentations into Flash files, making them easier to download by greatly reducing the file size without compromising quality. Flash files can be viewed in the Flash Player, which is a free plug-in installed on 98% of all computers, so the vast majority of web users will be able to access the presentation regardless of what web browser or operating system they are using. Files stored in the Flash format are secure and cannot be copied or edited by the end user since access to these files is confined to the browser window.

*Publishing a PowerPoint to the web using Articulate Presenter decreases the file size, increases accessibility, and provides a customized and intuitive navigation interface.*

Additional features of Presenter include the ability to add interactive quizzes and to publish to a Learning Management System (LMS). Presenter allows users to specify additional information about a resource that is required for a LMS, such as how to track and record learner progress and completion. Simply enter in the desired information, and Presenter will output a resource that can be tracked by any standards-compliant LMS.

## Podcasting

Podcasting is an automated way to distribute audio and video files on

the web which can then be played on a users computer or portable device. Although there has been a lot of hype over podcasting, the format has two main benefits for the learner.

**Subscription:** learners can subscribe to podcasts so that they can instantly be updated when additions or changes to the content occur.

**Portability:** Podcasts can be played on a computer or transferred to a portable device so that material can be reviewed regardless of time and location.

A PowerPoint with audio narration contains all of the elements necessary for a great podcast and a single PowerPoint file can be used to produce 3 different types of podcasts – audio only, enhanced, or video. The features, advantages and disadvantages of each format are listed in the following table:

	Features	Conversion Tools	Advantages	Disadvantages
Audio	Audio	QuickTime Pro	Small file size	No slide image
		Podcast Maker	Easy to produce	No chapter markers
Enhanced				No links
	Audio	QuickTime Pro	Small file size	Technical assistance required
	Slide image	Podcast Maker	Navigate using chapters	Difficult to see on iPod
Video	Chapter markers		Thumbnail of slide	
	Links		Thumbnail of slide	
	Audio	QuickTime Pro	Navigate using chapters	Large file size
	Slide image	Podcast Maker	Slide image	Technical assistance required
Chapter markers			Links	
	Links		Easy to see on iPod	

Although the conversion of a PowerPoint to a podcast requires a bit more technical skill, the conversion is the last step in the process and can be accomplished with easy-to-use tools and minimal technical assistance.

*Podcasting is a great way to distribute presentations online and provides learners with a convenient and accessible way to view and navigate presentations from a desktop computer or portable device.*

## Case Studies

### Medical Microbiology

For a Medical Microbiology course, the instructor chose to pre-record his lectures using the built-in audio narration functionality of PowerPoint, and he published them to the web using Presenter. Students were then asked to view these presentations, ranging from 15 to 45 minutes in length, to prepare prior to the in-class session. During class the instructor led an interactive discussion session based on the foundational material in the pre-session web presentation.

By providing access to the resources online, students were able to learn the didactic content at their own time and pace. Not only were they able to review the content prior to the session, but the online availability meant that they could review it post session and for exam preparation as well. And because the students had already been presented with the lecture material beforehand, the in-class sessions were more interactive. The instructor was able to engage the students through facilitating discussion and problem-solving instead of just lecturing to them.



### Mini Med School Podcasts

A pilot project into podcasting live lectures was conducted in conjunction with Queen's Mini Med School, a non-credit course taught by Queen's Medical faculty offered to the Kingston community. The audio for the lectures was recorded live using PowerPoint's built-in narration functionality and the timings were synced with each slide. The audio was then exported from PowerPoint as a QuickTime movie and converted into an MP3 using QuickTime Pro. Images of each slide were exported from PowerPoint as JPG files, then synced with the

audio track using Podcast Maker where chapter markers were also added. The result is a navigatable enhanced podcast, which can be viewed on a desktop computer using QuickTime or downloaded to an iPod or other portable media player.

## Summary

Using their existing PowerPoint skills, instructors can rapidly develop interactive multimedia resources to support e-learning. With minimum technical support, publishing to the web or podcasting increases distribution and supports presentation re-use, and the addition of audio and quizzes increases audience engagement and supports active learning.

For more information please visit the MedTech website at <http://meds.queensu.ca/medtech>.