

Dumping PowerPoint In Favor of Web Sites

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Abstract

This paper describes how comprehensive web sites (online study guides) are being used as a tool to deliver course material. Such a delivery tool may not be needed for all courses, but feedback from students suggests that web pages provide improved delivery of course material. Students report that having a complete site with all course material presented in hierarchical order with links to related internal and external material gives the course more structure and that the material is more convenient to access. Although the specific software tool used to create these study guides is held in high regard, the intent is to present the value of online study guides as a teaching tool rather than the merits of a specific program. Other educators may prefer to use a different program to develop study guides.

While teaching an online class, a new software tool was used to facilitate the development of a web site containing the course material. The objective was to provide additional instruction and reference material to compensate for not being with the students in person. Although the students had the textbook and recorded lectures with accompanying slides (PowerPoint), an additional resource seemed to be needed to guide them through the course material. Similar web sites were later developed for three traditional classroom courses. In these classes, the course material web sites were called online *study guides*. A study guide falls between a textbook and lecture slides in terms of the level of detail to the material presented.

Say Hello To PowerPoint

In the pre-digital, olden days of public speaking, audiences mostly looked at the speaker who used their words, voice inflection, gestures and an occasional visual aid to make their points. If the audience were students in a classroom, then they busily took notes trying to catch every important point that might appear on an exam. Now, audiences often stare at images projected onto a white screen and take minimal notes. This is because two technologies emerged some twenty years ago that significantly impacted the craft of public speaking. The impact soon affected the delivery of classroom lectures and the overall practice of teaching. The technology is so compelling that things will never go back to how they were before. These technologies are none other than the software for producing and displaying slides and data projectors to display the slides for all to view. Since the slides are easily printed or distributed electronically, lecture slides have often become a primary media for course material distribution. This paper makes the claim that PowerPoint slides, which are perfectly suited for presentations at conferences and business meetings, might be suboptimal to web pages for course material delivery.

In 1987, Microsoft purchased the software rights to a product called Presenter that was developed by Forethought Inc. and renamed it PowerPoint. Initially, PowerPoint files were sent to third party companies, which for a fee produced 35mm slides for use with a slide projector. However, this was short lived as addressable liquid crystal display (LCD) projectors were simultaneously being developed. In 1988, Panasonic and Samsung purchased licenses to technology allowing them mass produce LCD data projectors.(Hewitt, 2008) In the 1990s, PowerPoint became very popular; and data projectors and instructor computers were being installed in as many classrooms as budgets would allow. PowerPoint is the standard by which other slide presentation software is measured. The term "PowerPoint" has become not only the name of Microsoft's product, but also a generic label for slide presentation software. The subject matter in this paper is slide presentation software - not Microsoft's PowerPoint product. The observations presented here apply equally to OpenOffice Impress, Prezi, Apple Keynote, Google Docs Presentation or any other slide presentation software.

Advantages of Slides

There are good reasons to use slide presentation software and data projectors in presentations of all kinds, including classroom lectures.

- Slides allow for complex charts, data and examples to be rapidly displayed. This can save a great deal of time when presenting complex material, which increases the level of detail and volume of information that can be covered.
- Slides serve as an outline for the presenter to help them stay on topic.
- Slides help the presenter not to forget important points.
- Paper or electronic copies of slides provide useful notes to the audience to help them remember what was presented. Listeners may want to take additional notes in the margins of the slide handouts.

Problems With Slides

Nearly as soon as slide presentations became popular, audiences began to complain that the presentations were less interesting and that the technology might be the problem. Several published blogs and articles criticizing presentation slides, or PowerPoint specifically, are posted on the Internet. (Cheadle, 2009), (Garber, 2001), (Schulten, 2010), (Tufte, 2005) A common theme to the complaints is that slides become a crutch to the under-prepared speaker and get in the way of effective communication. (Garber, 2001) Some specific cited problems include the following.

- The linear sequence of slides loses the hierarchical organization of information.
- The media is tailored for visual aids in presentations - not knowledge distribution, yet it is often used for such.
- Presenters can be caught off guard when the next slide is not as expected.
- The slide sequence dictates the presentation rather than allowing free flowing dialog.
- Text and bullet points on slides tend to promote reading of slides, especially for less experienced speakers.
- Slides promote information overload where too much information is presented for the audience to absorb.
- Long examples or computer programming source code are difficult to fit on slides.

The Task At Hand

The problems with presentation slides have prompted some, especially educators, to entirely abandon the technology. (Shulten, 2010) Some suggest that the problem is not with the technology, but with under-skilled and under-prepared speakers. They offer many tips and suggestions to help novice presenters be more successful with their slide presentations. (Indezine), (Presentations), (Paradi, 2010)

An important observation to make here is that the objectives of an educator go beyond public speaking. The educator is more concerned with student learning than with impressing the students with dazzling presentations. Dissemination and assimilation of knowledge both inside and outside of the classroom is the primary objective. This paper makes the suggestion that if teachers plan to use the same media for both classroom presentations and course material delivery, then they should consider using technology that is well suited for course material delivery rather than for public speaking.

Coming To A Web Browser Near You

Modern software tools can greatly facilitate the development of comprehensive web sites. Such a tool has been used to develop web sites for four courses. These web sites are being referred to as *study guides*. The intent is that the site offers the instructor's perspective on the

course material. It can include narrative notes and discussion, example programming source code and problem solutions similar to the material found in a course textbook. It can also offer lists of important points and diagrams similar to what might be found in PowerPoint slides. Each page of the study guide is intended to address only one topic, but they are not limited by the constraints of how much material may be displayed on the screen at one time. To view longer pages, users need only scroll down on the page. The pages are organized in a hierarchical manner with chapters, sections and sub-sections; but each page also contains a link titled "Next" to facilitate a progression through the material.

A study guide is ideally web based; provides links to related material from within the study guide and from external sites; provides links to download supplemental files that students need; provides instruction and related material for all assignments including the links to submit assignments electronically; contains a detailed table of contents, index and glossary for the whole course; presents a hierarchical view of the course material; and it may be searched electronically. The content of web based study guides for different courses might vary greatly depending on the material for the course and the instructor. A good way to understand how the study guides are used is by viewing examples. The following simple web page provides links to the study guides that have been developed thus far:
http://www.sal.ksu.edu/faculty/tim/study_guides.html

Intellectual Property Rights

One potential concern is violation of the intellectual property rights of the author or publisher of the textbook used. Just as instructors are given the right to use PowerPoint slides with material from the text book, the principle of "fair use" allows use of portions of works for non-profit, academic derivative works.(KSU) If material is taken directly from the textbook or publisher provided PowerPoint slides, then it is important to cite the source of the material and acknowledge the work as a derivative work rather than an independent publication. Further steps that could be taken if deemed necessary are to seek permission from the publisher, refrain from publishing links to the study guides in other web page so that they will not be easily found using Internet search engines, and restrict access to the web pages to only students enrolled in the class.

Tools For Developing Study Guides

Some educators may fear the complexity associated with developing comprehensive web sites. Indeed, it would be a challenge to manually develop the HTML code for all the pages of the site. Particularly challenging would be maintaining all of the cross reference links and the index page as the site evolves. However, there are software tools that can facilitate the generation of complete web sites.

The program that was used to generate the study guides discussed in this paper is called Sphinx.(Sphinx) Sphinx is a free, open source program that was developed for the purpose of documenting the Python programming language and projects developed using Python. It is now also used for many other applications besides Python documentation. Sphinx is not a graphical application like a word processor. It is a text formatting tool. Sphinx uses reStructuredText as its markup language, and many of its strengths come from the power and straightforwardness of reStructuredText.(RST) As a markup language, reStructuredText is nearly as expressive as LaTeX, but it is easier to write. Text formatting tools, such as Sphinx or LaTeX, are fairly simple to use and do a great deal of the tedious work for the author. Most of features of the study guides that make them easy to navigate (table of contents, inter-document links, index and search feature) are generated automatically by Sphinx.

Some may prefer a program that uses a graphical user interface to create a complete web site. DreamWeaver is perhaps the most advanced of such tools.(DreamWeaver) A free program for such applications is HTML Kit.(HTML Kit) Another program directly produces a set of web

pages direct from PowerPoint files that use Adobe Flash.(Presenter)

Using Study Guides

The initial study guide was developed for an online class to provide a resource to students as they worked on assignments. Part of the initial motivation for developing the first study guide was because the textbook assumed that readers had more experience than what the students in the class had. Thus, the study guide was a supplement to the recorded lectures and offered explanations to some material that could be referred to as students worked on assignments. It was discovered that the utility of the study guide went beyond explaining difficult material. The study guide offered a better means for distributing course material than posting a collection of individual PowerPoint and programming source code files.

After the first study guide was developed, it was clear that web based course material delivery was viable, but there was uncertainty about how they would work for a traditional, face-to-face class. Of particular concern was how it would work to deliver lectures using the web pages. Some of the material in the study guide might be written as narrative text explanations, which is completely counter to the experts' suggestions of minimizing the amount of text on each slide for successful PowerPoint presentations.(Garber, 2001) Separate material could be developed as a set of PowerPoint slides for lectures and a study guide for students to reference outside of class. But this is not desired for several rather obvious reasons.

The author found that study guides work well as visual aides in class presentations. Using the study guide in the lecture demonstrates to the students where they needed to look to find information. In addition to the narrative notes, lists of important points, examples and diagrams were included in the study guide, which gave plenty of visual aid assistance during lectures. The longer narrative descriptions were referenced in lectures, but an effort was made to never read the notes to the students. In fact, it was easier to lecture using the study guides than slides. The study guides help to prevent being caught off guard by the next page not being what was expected because each page has a brief table of contents and links to the next and previous pages with their titles, which provide reminders of what material will be displayed next.

Findings

Student reaction to the study guides has been very positive. Student feedback indicates that students highly value accessibility to course material and structure in courses that they take, which are both facilitated by study guides. Study guides provide a complete web site consisting of many, highly integrated pages. Except for some of the more detailed material covered only in the textbook, all of the information that students need for the class are either contained in the study guide or accessible as links from the study guide. A comment from a student taking the online class addressed the matter of comprehensiveness of the study guide in a teacher evaluation survey:

This was probably the greatest idea ever. Having everything in one location was definitely a positive and was way more intuitive than having to search through KSOL modules to find the right information.

A survey was conducted of students in the three face-to-face classes regarding the study guides.¹ It was clear that students liked that it was web based because it is easy to find the information that they needed. The following comment is typical of comments received in the survey:

I particularly liked having it web based since it saved me from having to carry the book around with me and also it made finding the material for that day's lecture or homework assignment very easy.

1 Thirty students completed the survey.

The first five questions probed various aspects of the students' impression of the study guide. These questions used a five point scale (1 = a distraction, 2 = not helpful, 3 = minor help, 4 = helpful, 5 = very helpful). Note the second question below, which shows that the study guides scored particularly well when compared to the more traditional alternatives.

Question	Average Score	Percent 4 or 5 vote
1. Please rate the value of the study guide towards helping you understand the material.	4.27	93
2. Please rate the degree to which the study guide being a web based resource was helpful as compared to notes in pdf or PowerPoint files.	4.67	97
3. Please rate how much the study guide being a hierarchical document (chapters, sections, subsection, ...) with a tables of content was helpful to you in terms of giving structure to the class and making it easier to find and understand the course material.	4.52	88
4. Please rate how easy it was to use the features of the study guide (table of contents, links to related information, index, search ability) to find information.	4.48	88
5. Please rate how having nearly all of the course material including assignments available through the study guide gave the course more structure.	4.56	88

The last two questions of the survey probed the students' priorities in terms of what they like to see in classes that they take. These questions also used a five point scale (1 - I do NOT want that, 2 - I would prefer not, 3 - I can take it or leave it, 4 - It is somewhat desired, 5 - I very much want that). The student responses to these questions were as expected in terms of known priorities of millennial generation students.

Question	Average Score	Percent 4 or 5 vote
6. To what extent do you desire to be able to electronically search for or quickly look-up information in the course material for classes that you take?	4.56	88
7. To what extent do you desire structure in the courses that you take?	4.56	100

Conclusion

For many classes, web sites seem to offer a preferred media for course material distribution to presentation slides. Presentation slides provide nice visual aides in presentations, but are not well suited for course material distribution. Web sites offer better flexibility for the level of detail presented in course notes. They lend better organizational structure to the course material. They also make the course material more accessible, which is highly desired by students.

Using currently available software tools, it is not difficult, but is quite a bit of work to produce course material in the form of web sites. It is anticipated that more programs will be developed in the near future that will make it increasingly easy for non-technical faculty to experiment with course material distribution via web sites.

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