Online Courses as Learning Scripts: Using storyboards in online course design

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Introduction

As content elements have increased in use in online courses, it is time for instructors to begin to look for methods for effective integration of the many elements into a cohesive course to improve their practice, and storyboards provide one such method. During this presentation, we will look at why storyboards are important, how they can be developed in a simplified manner for online educational uses, and how to put these storyboards into practice. Put simply, storyboards are a means to graphical represent layout, organization, content, and linkages of information within a multimedia context to create a conceptual idea of the information location, meaning, and appearance.

Why Use Storyboards?

There are many reasons for using storyboards: visually displaying an overview of information, stimulating divergent thinking, organizing judgmental problem solving, generating a plan of action, demonstrating functionality of elements, showing navigational schemes and finding cross-referencing linkage possibilities, checking completeness, can be evaluated by others, building consensus among groups of developers, identifying common points of reference or focus, helps graphical sizing and organization, helps one to think about appropriate activities, and simply telling you how the project will appear in final form (Iowa State University Extension, 2004; Mallon, 1995; NCREL, 1999; Stanton, 2001; Usability Net, 2003). Perhaps most importantly, storyboards provide a simple means of understanding the relation of one element to the overall scheme, and how various knowledge elements can become interconnected. By seeing the interconnectedness of knowledge within a course, the instructor is better able to design in a manner by which the students can also see these connections. Furthermore, the flow of the course can best be designed for ease of use and student understanding of the knowledge represented, especially when multimedia elements are utilized.

Creating Storyboards

After providing examples showing the various uses of storyboards outlined above, we will continue with their generation. Storyboards can be created in many different ways depending on your needs, preferences, and source referred to. Numerous resources delineate the basic needs of storyboards (DAF, 1993; Lee, 2000). All storyboards should have certain elements in common though. These include: date, version, name, lesson, topic, frame # (from a flowchart), rough drawings, audio or video sequence or script, interaction instructions, screen text, and navigation and information linkages. As Chapman (1995) writes, "Script-storyboard formats from the past are inadequate for designing today's interactive training." Therefore, we utilize a simplified yet informative storyboard template (Figure 1) adapted from Hirumi (2002) for displaying storyboards. Our experience has shown that this simplified storyboard reduces the time for storyboard creation and highlights key features required in an educational context.

Before Beginning

Once a template is selected, a series of steps can be followed in order to generate the most usable and effective final product. We will walk through these steps during this presentation. Several of these steps should already have been processed as part of a standard instructional design plan. Such early steps include the analysis phase of the design. Identification of the target audience is required to determine media competencies and access abilities. Definition of the instructor's teaching style helps to choose media elements that can best be integrated into the teacher's methodology. Also, delineation of goals and objectives are required to best meet the needs in a pedagogically effective manner. Methods such as brainstorming and sharing can help to identify the key issues to focus on.

Before building the storyboard, one should also have organized the information and matched the media tool to the appropriate content and pedagogical need. Aspects such as accessibility, engagement, instruction style, and availability also play a role in the organization and choice of media.

Storyboarding Process

Once the information is organized and media chosen, we are ready to begin the actual storyboarding process. Many storyboard templates exist (Allessi, 1985; Hirumi, 2002), but in our simplified method, the actual text and images do not necessarily need to be finished, only visualized in concept in the beginning as revision is often used. Like templates, many process outlines also exist (DAF, 1993; Lee, 2000; Heinich, 1999; Iowa State University Extension, 2004; Usability Net, 2003). We have taken these outlines and created a list of steps that we have found efficient and effecting in educational storyboard design. After walking through these steps, this presentation will then look at the most frequently encountered problems when developing and implementing storyboards.

Steps

- Organize all information and media elements.
- Review rationale for materials choice.
- Produce flowchart or screen-by-screen outline.
- Write preliminary text.
- Produce initial storyboards.
- Check the fit of overlaying displays and interactive elements.
- Check content elements for fit and appropriateness in the given context.
- Build information linkages.
- Review flowcharts and storyboards.

Putting Storyboards into Practice

By creating a complete overview of a course through storyboarding, one can better place content and interactivity in an effective manner the first time a course is developed. Certain pitfalls such as missing information, redundant information, poor transitions, etc. can be avoided with properly developed storyboards. There are also fewer questions among a group of developers. The storyboard can serve as a constant reference point by which the design process can follow. To end this presentation, we will demonstrate how a sample storyboard has been put into use to develop an instructional unit. By following this example, participants will learn one more tool in the creation of a personal best practice.

Figure 1: Sample Simplified Storyboard Template

<table>
<tr><td>Unit Title: (...) Page: # of # for this storyboard
Lesson Title: (…)
Frame #: (From the flowchart)
Date: (Very important to keep version history)</td><td>File Name: (Name that this file will be stored under)
Screen Description: (Brief description of the learning experience to take place on this page)</td><td rowspan="2">Text Outline: (Can be as detailed as required)</td></tr>
<tr><td colspan="2">Work Space: (Rough sketch of the page)
-text with attributes and links
-graphics, multimedia, and color schemes (such elements may have a storyboard of their own as well)
-layout and chunking of information</td></tr>
<tr><td colspan="2">Additional Notes: (Description of miscellaneous information or directions for other project members when appropriate)</td><td>Rationales for media usage</td></tr>
</table>

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Biographical Sketches

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