Creating Effective Course Content in WebCT – An Instructional Design Model

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As one part of its faculty development mission, the Instructional Technology Resource Center ([ITRC](#)) at [Idaho State University](#) assists faculty with transition from a traditional (face-to-face) course to a Web-enhanced course. This transition usually involves helping faculty create successful WebCT courses. According to Byun, Halelt, and Essex, faculty development specialists must keep in mind the aspects of the course development process that can facilitate success (2000). Success begins with a sound instructional design model, which must work effectively with the delivery tool being used to distribute the instructional content.

Courseware systems, like WebCT, include a delivery method and navigational structure that provide the framework for effective instructional design. Technically, the Content Module (CM) in WebCT is an organizational delivery method by which course content is supplied to students over the Web. Pedagogically, it offers hierarchical and sequential construction of information, which includes two of the four navigational structures recommended by Ruffini (2000). In combination with other WebCT tools, the CM tool can be used to create an effective and flexible navigational structure (Friesen, 2001).

Creating successful WebCT course content requires that the instructional goals drive the design and performance of the technology. The instructional content must offer a distinction between Web pedagogy and Web distribution (Fraser, 2001). Implementing effective course content in WebCT can be a challenging process due to the numerous technical and design considerations. A systems design model approach, such as the Dick and Carey Instructional Design Model, provides direction to achieve effective and meaningful instruction via the WebCT Content Module.

The Dick and Carey model consists of ten elements (Dick, Carey, & Carey, 2001): (a) assess need to identify goals, (b) conduct instructional analysis, (c) analyze learners and contexts, (d) write performance objectives, (e) develop assessment instruments, (f) develop instructional strategy, (g) develop and select instructional materials, (h) design and conduct the formative evaluation of instruction, (i) revise instruction, and (j) design and conduct summative evaluation. The clearly identified steps involved in developing instruction, provide a starting point for developing course content in WebCT.

An important element of the Dick and Carey system is the creation of an instructional strategy. Dick et al. (2001) explain, 'instructional strategy is used generally to cover the various aspects of sequencing and organizing the content, specifying learning activities, and deciding how to deliver the content and activities' (p. 184). The instructional strategy is an import piece of the entire instructional process and utilizes the information gathered in early stages of the design process to empower the organization and delivery of course content.

In order to avoid overwhelming faculty with the complexities of the Dick and Carey model, the ITRC offers an instructional guide with a series of general questions that provide procedures for creating and organizing course content in WebCT. These procedures mirror the Dick and Carey strategies of instruction. Each question in the guide leads to the development of instructional strategies and the augmentation/design of instructional materials.

Preparing for Online Delivery

A critical step in making the transition from the classroom to the Web is identifying the level of online involvement that fits the pedagogical structure and the technology comfort of the faculty member and students. Harmon and Jones (1999) provide five levels of Web use in schools, colleges and corporate training: (a) informational, (b) supplemental, (c) essential, (d)

communal, and (e) immersive. Each level represents the amount of course content occupying the

online component of the course and the level of reliance on the course Web site to deliver

instruction.

The WebCT CM can be used at any of the five levels. At level one, it can be used to simply

provide course information and materials, such as the syllabus and/or handouts. Higher levels of

online involvement are achieved through discussions and regular student use of the Web

component. Achieving a higher level of online involvement requires a tool that is flexible

enough to fit the context of the delivery method. For example, level four retains the traditional

classroom meeting but makes steady use of the Web course site. This has specific implications

for how instruction will happen online and how to use the CM.

Initiating the WOWDOC

The ITRC created a decision-making guide called the WebCT Ordinal Web Delivery

Organization Companion (WOWDOC) to aid faculty with developing course content. The

structure of the WOWDOC is based on the outline of instructional strategies offered in the Dick

and Carey model and provides designers a map to follow for delivering effective content. The

questions posed by the WOWDOC help designers develop a broad indication of the instructional

problem and self-recommended solutions to initiate instruction in the CM.

Baylor, Kitsanas, and Chung (2001) developed a similar reflective question tool called,

Instructional Planning Self-Reflective Tool (IPSRT). The IPSRT is designed to facilitate self-

reflective thinking through the lesson-planning process for a traditional or online course. It is

useful for self-evaluation and monitoring of course planning, but it's not designed to provide

assistance in organizing and developing instructional content (Baylor et al., 2001). The ITRC

uses the ISPRT in combination with the WOWDOC to provide the process for systematic instructional design.

Like the ISPRT, the ITRC WOWDOC uses reflective questions to guide the selection of instructional strategies. The reflective questions of the WOWDOC provide guidance to designers about how course content will be processed, delivered and organized in the CM. The device assumes that designers have already decided to exercise instruction inside of WebCT and have performed an instructional analysis.

The instructional analysis includes the following considerations: (a) an instructional goal and goal analysis, (b) subordinate skills, (c) performance objectives, (d) associated test items, (e) learner analysis, (f) learning context analysis, and (g) performance context analysis (Dick et al., 2001). Defining these elements is important in order incorporate the CM design into the overall instructional strategy.

The WOWDOC includes six processes for developing instructional strategies inside the CM: (a) identify the level of online involvement, (b) define pre-instructional activities, (c) select content and determine presentation format, (d) determine learner participation, (e) develop assessment procedures, and (f) review activities. Items (b) through (f) were derived from Dick et al. (2001) as part of the instructional strategy. This six-step analysis produces a direct link between the instructional goals and the features of CM with reflective questions and recommendations. This reflection and recommendation format, as represented in Figure 1, provides a sample structure for the instructional strategy process delivered in the WOWDOC.
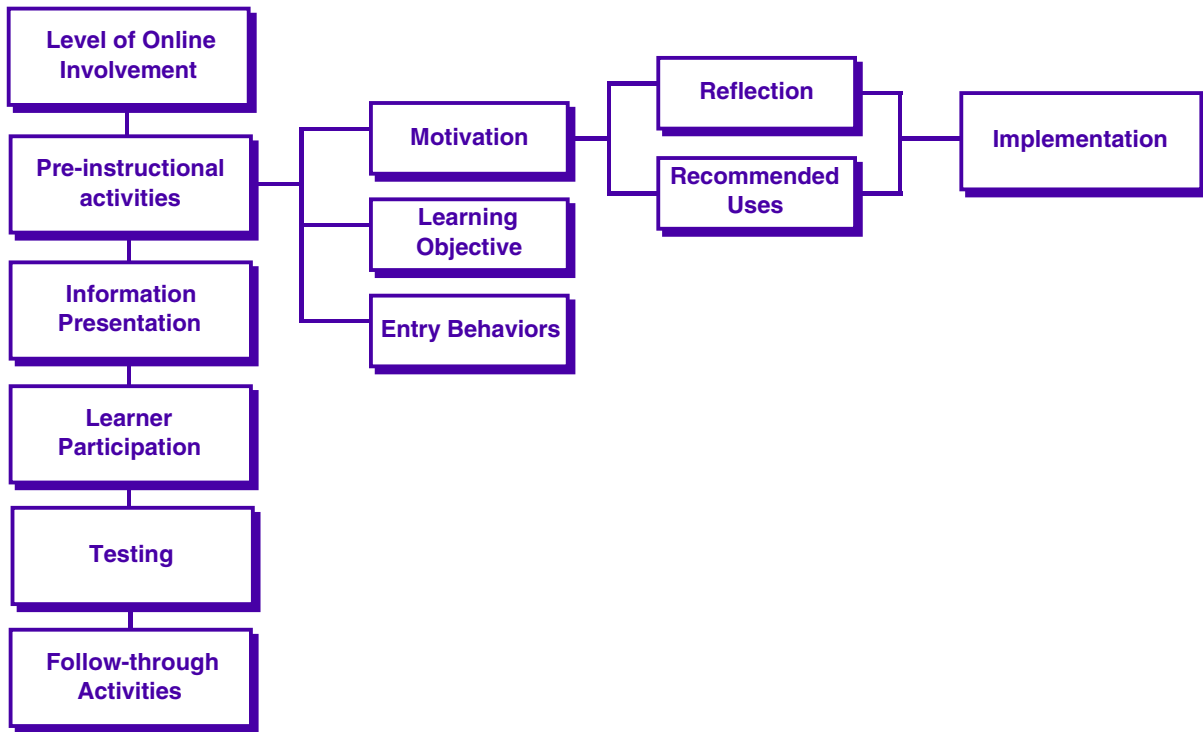
Figure 1. The systematic flow of motivational analysis in WOWDOC.

For example, in the pre-instructional activities section there is a motivational analysis. One reflective question asks, "how will learners react to the content materials, feeling overwhelmed or confident?" The answer reveals a key structural element of the content design. The motivational reflective questions help instructors design content with respect to the learner's need for rewards, as well as his or her interests, feelings and attention levels.

After the motivation questions, the WOWDOC includes a series of recommendations on how the CM can be utilized to encourage motivation in the learner. It provides specific examples of WebCT tools that interface with the CM and support the instructional process. For example, if the answer to the above question about learners' reaction to the content is that they will feel overwhelmed, then the recommendation is to review the content for applicability and consider either removing excess elements or breaking the content into separate content pages.

This process of reflection and recommendations ensures the most appropriate media formats are selected based on the needs and capabilities of the instructor and students as well as the course goals. It provides the foundation for the structure of content materials, and lastly, it guides the selection of CM features that best fit the content itself with respect to the course learning outcomes.

Consider Implementation

At this point, the instructor/designer is ready to complete the WebCT instructional package and implement instruction. Dick et al. refer to the instructional materials, print and mediated, as an "instructional package" (2001). Designing the WebCT instructional package involves re-design of existing instructional materials and the selection or design of new materials and placement in the CM. The WOWDOC analysis provides guidelines for execution of the instructional package.

With the instructional package in place, implementation of instruction involves not only the actual teaching of the course but the formative evaluation of course performance. Evaluation methodologies are developed as part of the instructional package as a result of the WOWDOC analysis. For example, the designer may use a survey question in association with the content to ascertain student reaction to the materials, to address the earlier question about motivation. Information gathered through this kind of evaluation is then used to re-design the materials in the next cycle. This circular process involves repeated use of the WOWDOC and encourages reevaluation of the instructional package.

Conclusion

The Dick and Carey model continues to be widely used and widely accepted and referenced by academia and business (Dick, 1996; Gagne et al., 1992). A number of instructional design

models are available for evaluation and practical use today, but many have not been successfully interfaced with the challenges of Web-assisted instruction. Most instructional designers recognize the ongoing scrutiny and improvement of instruction as one of the most important steps to the instructional design process (Dick et al., 2001; Gagne et al., 1992).

Many of the challenges of developing course content for use in courseware like WebCT, become manageable with the instructional strategies and recommended uses offered in the Dick and Carey model. Utilizing the Dick and Carey guidelines, the WOWDOC aids faculty in beginning the process of moving instruction to WebCT. The transition from classroom content to Web-enhanced course content should be strategically planned and tools like the WOWDOC provide the pedagogical direction for those designing instruction within a WebCT Content Module.

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