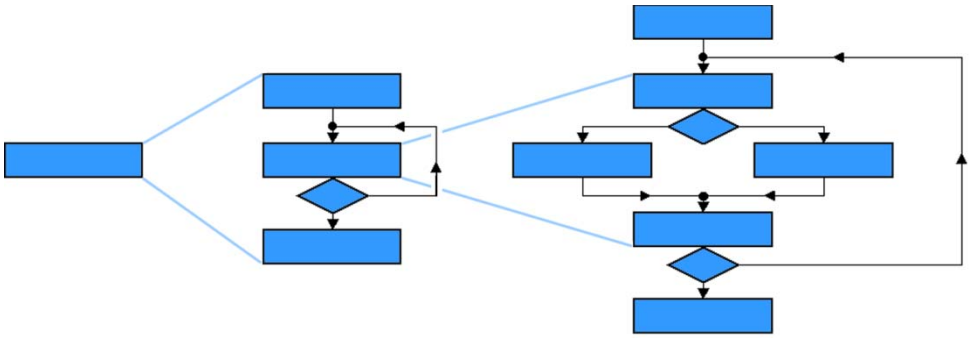


Flowcharting Procedures (Not as Easy as It Looks!)

IT5670: EdWeb Project

EdWeb Update 2 **Version 1.0**

Feb 2012

Ken Thomas

Table of Contents

Executive Summary

Summary

Instructional setting

Through observations, interviews, and product reviews, it is apparent that the majority of our employees responsible for capturing and documenting procedures lack the required skill set.

Goals and outcomes

The project stakeholders require the following results:

- A combined score of 80% or higher on the Level 2 assessment & summative project
- A score of 80% of higher on the Level 3 work sample

Learner needs and characteristics

The target audience for this initiative include the following roles:

- Instructional Designers
- Knowledge Management System Analysts/Writers
- Policy & Procedure Writers
- Learning Development Managers

Instructional content

After completing this learning intervention, the learner will be able to:

- Match flowchart symbols to their labels.
- Apply a flowchart to a detailed case study.
- Create a flowchart to document a basic procedure.
- Create a flowchart of appropriate complexity to document a complex procedure.

Note: *To view the formal instructional objectives, see the Instructional Content section of this document.*

Project management

This project will be ready for roll out by Spring 2012.

Instructional design model

The discovery based learning intervention will consist of:

- An interactive WBT course
- Job aid (basics & best practices)
- Post course assignment

Analysis

Instructional Setting

Intro

Being able to clearly and completely document procedures is a foundational skill set to the following positions within Express Scripts, Inc.:

- Instructional Designers
- Technical Writers
- Policy & Procedure Writers
- Learning Development Managers

Through observations, interviews, and product reviews, it is apparent that the majority of our employees in these positions lack expertise in capturing procedures.

Methodology & findings

The following table presents the primary methods and findings of the analysis effort for this project:

Method	Description	Primary Findings
Interviews	The ID Team Manager interviewed the following ESI managers: Rick Egdorf, Manager – Knowledge Management System (KMS) Team Jim Bernholtz, Sr. Manager – Policies & Procedures (P&P) Team April Sullivan, Learning Development Manager (LDM)	Managers consistently listed the inability to properly flowchart a procedure as the most critical skill their team members lacked.
Observations	A group of 15 employees from the KMS, ID, P&P, and LDM Team members were gathered for a workshop in St. Louis, MO. During the workshop, the team members were given the task to build a flowchart to document the procedure for boiling water. The employees were then directed to revise their flowcharts to address amount of water needed (cup vs. multiple gallons), and available heat sources (microwave, stove, camp fire).	When documenting the basic task of boiling water, the employees finished within 5 minutes – resulting flowcharts were simple, clear, and complete. When they were asked to revise their flowcharts to address amount of water and available heat sources, less than half finished within 30 minutes (when time was called) – resulting flowcharts were difficult to follow, did not address the considerations, and failed to use proper flowcharting conventions. Bottom line, a novice user could not have successfully boiled water following the flowcharts.
Product review	The ID Team Manager collected flowcharts developed by KMS, ID, P&P,	Our flowcharts “suffer” from the following symptoms:

Method	Description	Primary Findings
	and LDM Teams. The flowcharts were reviewed using the following criteria: • Use of flowcharting conventions (symbols, left-to-right/up-to-down orientation, level of detail, etc.) • Ease of use • Completeness • Aesthetics (attractiveness of layout, font, etc.)	• Inappropriate use of symbols • Poor visual flow • Incomplete content (e.g., decisions that don't cover all cases) • Poor writing within symbols • Inconsistent level of detail • Weak aesthetics (i.e., most flowcharts look unprofessional and amateurish)

Business drivers

The risks of inadequately documenting procedures during the analysis, design, and development phases of a project include:

- Lack of understanding of the procedure (especially branches off the "common path")
- Incorrect information in Knowledge Management System, Training, and Policies & Procedures documents
- Inadequate system support for on-the-job performance
- Undesired on-the-job performance

In the worst case scenario, an employee may perform a critical procedure incorrectly and put a patient's health in jeopardy.

Solution

The Instructional Design (ID) Team will design, develop, and implement a self-paced Web-Based Training (WBT) course to teach employees how to use flowcharting to document procedures. The ID Team will also create a set of flowcharting job aids to support the WBT course, as well as on-the-job performance.

Note: *Training may be completed at their desk or in a training lab. The length of the course has not yet been determined.*

Rationale

A self-paced WBT course was selected for the following reasons:

- The target audience is spread out in 6 cities across the United States. Due to recent changes in travel policy, we are unable to gain the VP approval required for travel & lodging costs (over $40K) for this initiative.

Note: *We can, however, justify the case for a WBT deployment, as there are no travel costs – only development costs, which are slightly higher than costs of creating an ILT workshop.*

- The finished WBT product will also support "training on demand" for new employees on our teams, employees who require refresher training, and other departments who may benefit from this course.

Tech specs

Learners must meet the following technical requirements:

Item	Requirement
Computer	Desktop or laptop
Operating System	Windows XP or Vista
Resolution	1280 x 800 (minimum)
Browser	IE 6.0 (or greater)
Plug-ins	Flash Player for IE
Speakers / headset	Not required

Stakeholders

Stakeholders for this project include:

- Denise Quinlan, Director – Operations Training
- Ken Thomas, Manager – Instructional Design
- Rick Egdorf, Manager – Knowledge Management System (KMS) Team
- Jim Bernholtz, Sr. Manager – Policies & Procedures (P&P) Team
- April Sullivan, Learning Development Manager (LDM)

Goals and Outcomes

Measures of success

The ID Team Manager will use Kirkpatrick's first three levels of evaluation to measure success of this initiative:

Kirkpatrick Level	Strategy
Level 1: Reaction	A Level 1 survey will be provided to learners to gauge learners' reactions to the course.
Level 2: Learning	A summative test will assess learners' mastery of the course's terminal objectives. This test include a combination of multiple choice and graphic identification interactions. A summative project will be given to the learners to create a flowchart of a procedure. This flowchart will be evaluated using the same objective criteria used to assess the "Boiling Water" activity used in the analysis effort. ***Note:*** *We may releverage the Boiling Water activity or have them flowchart a procedure from the field.* ***Note:*** *We need to create scoring rubric for the objective criteria we'll use to evaluate flowcharts. This rubric will also be of value to the target audience, so will be published as a job aid.*
Level 3: Transfer	New flowcharts developed by graduates will be collected and evaluated using the objective criteria used to assess the "Boiling Water" activity used in the analysis effort and the summative project. ***Note:*** *Employees who fail this assessment or whose flowcharts are identified as problematic after the Level 3 assessment will be asked to re-take the course, and will be subject to one-on-one coaching.*

Note: *The project stakeholders require the following results:*

- *A combined score of 80% or higher on the Level 2 assessment & summative project*
- *A score of 80% of higher on the Level 3 work sample*

No additional criteria for success are required – we believe successful performance at Level 2 & Level 3 will drive desired behavior in the field (i.e., well designed flowcharts having a professional and standard look and feel).

Learner Needs and Characteristics

Intro

This section describes the basis demographics, experience, and other relevant characteristics of our primary target audience.

Job functions

The target audience for this initiative include the following roles:

- Instructional Designers
- Knowledge Management System Analysts/Writers
- Policy & Procedure Writers
- Learning Development Managers

The employees in these roles perform the following relevant job functions (i.e., job functions that require or benefit from strong flowcharting skills):

- Analyze job tasks and procedures to determine performance gaps.
- Evaluate existing procedural documentation to identify materials that can be used as is, revised, or retired.
- Document new or undocumented job tasks and procedures.
- Maintain procedural documents (i.e., fix incorrect documents; update documents to incorporate new/changed policies, procedures, and/or systems; and improve confusing documents).

Demographics

The following table describes the learners' demographics:

Demographic	Description
Age	Range: 21 – 45 years
Education	High School – Masters degree ***Note:*** *The most common M.A. degree was related to writing or professional communication.* *Employees with only a High School degree typically have additional certificates in Business Writing, Information Mapping, or some level*

Demographic	Description
	of Structured Writing technique.
Language	All learners use English as their primary language.
Reading level	The reading level is estimated at 12th grade or higher. ***Note:*** *The training will still be written to a 10th grade level, as per our corporate standards.*
Disabilities	No learners list a handicap that relates to taking online training or performing their day to day duties.

Learner experience

The target audience *should* be experts in flowcharting processes and procedures. In fact, they have been hired based on their experience writing procedure-based documentation and training.

Prior to completing the "Boiling Water" activity, a sampling of the target audience self-reported an "Expert" level of skill flowcharting procedures. After completing the activity, learners adjusted their self-report to "Novice." During a debrief, the sample explained they would now rate themselves as "Expert" in reading/interpreting flowcharts, and "Novice" in creating them.

Consensus was expressed among the sample who went through the activity of the following. They were:

- Surprised at the level of difficulty they experienced documenting what should have been a relatively simple procedure (even with the considerations).
- Disappointed with their own performance.
- Motivated to improve their flowcharting skills.

Learner motivation

The course will be well-received by the audience. Prior to conducting the Boiling Water activity, the learners expressed "little or no" need (but "moderate" interest) in a workshop or course on flowcharting. After the activity, the sample of learners changed their responses to "high" need and "high" interest. Word of mouth resulted in a buzz of excitement in a

course or workshop focusing on flowcharting procedures.

Story: *One of participants in the Boiling Water activity told a coworker about the activity. The coworker responded, "That's so easy – people really had a problem flowcharting boiling water?" The person who had gone through the activity then challenged the coworker to flowchart the procedure. After 10 minutes of trying to accommodate different amounts of water and different heat sources, the coworker gave up saying, "Okay… apparently it's not as easy as I thought."*

Once the course is developed, it will become a requirement on the target audiences' IPS (Individual Performance Scorecard). As such, they will be able to take "time away from desk" to complete the course, and their managers will be responsible for ensuring successful completion.

Technological skills

All members of the target audience are highly techno-savvy. All have completed at least 5 WBT courses. All use software to support their daily activities, including:

- Office 2007 Suite (Word, PowerPoint, Outlook)
- Dreamweaver and/or Contribute
- Visio

  Note: *After the Boiling Water activity, target audience members changed their self-ratings from "Expert" to "Novice." One possible reason for this is a prior lack of awareness of symbols other than terminators, procedures, and decision points. Also, the target audience expressed a lack of understanding of aesthetic or readability decisions and standards.*

Learning preferences

There is a wide range of learning preferences among the target audience:

- The Instructional Designers and Learning Development Managers stated a preference of taking most training via WBT.

  Note: *They stated WBT was more professionally "interesting" and was more efficient, as they don't have to travel to an office and can complete the training at their convenience.*

- The KMS and P&P teams stated a preference for gathering in a classroom with a facilitator.

Note: *Although this audience often complains about taking self-paced training, they consistently score high on WBT course tests, and have an excellent track record of transferring WBT skills to the job (when they are held accountable and coached by their managers).*

They really just like gathering socially away from their "cubes," and training is the only time this happens. Some type of social event should be included to address this audience's expressed preference.

Instructional Content

Instructional products

The following instructional products will be created to support this initiative:

- Two-hour self-paced WBT (approximately 100 screens, including the course test), organized into lessons
- Job aid supporting flowchart basics (e.g., symbols) and best practices (e.g., spatial organization, clarity)
- Post course task (e.g., flowcharting a specific procedure)
- Objective flowchart evaluation tool & scoring rubric

Learning objectives

The following table lists the terminal learning objectives (TLOs) for the course:

TLO #	Condition	Behavior	Degree
1.0	Given a job aid that labels and describes commonly used flowcharting symbols and labels…	match symbols and their labels.	(contributes to 80% mastery on course test)
2.0	Given a complex flowchart (i.e. a flowchart including several decision points and branches), a case/scenario, and a list of possible outcomes (i.e., possible end points of the procedure)…	apply the flowchart to the case to select the appropriate outcome/end point.	(contributes to 80% mastery on course test)
3.0	Given a simple procedure (e.g., few Yes/No decision points, no pre-defined procedures)…	create a basic flowchart to document the procedure…	achieving a score of 80/100 on the objective flowchart evaluation.
4.0	Given a complex procedure (e.g., a combination of serial and parallel decision points, criteria-based decision points, pre-defined procedures requiring off-page connectors)…	create a flowchart of appropriate complexity to document the procedure…	achieving a score of 80/100 on the objective flowchart evaluation.

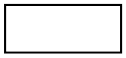
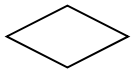
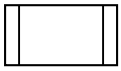
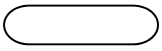
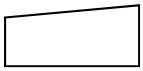
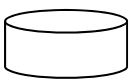
The following table identifies where each objective fits according to the knowledge dimension and cognitive process domain:

Knowledge Dimension	Cognitive Process Domain					
	Remember	Understand	Apply	Analyze	Evaluate	Create
Fact	1.0					
Concept		2.0				
Procedure			3.0, 4.0			
Metacognition						

Mastery test

The following table lists the draft key mastery questions for each TLO:

Objective	Mastery Test Question(s)
Given a job aid that labels and describes commonly used flowcharting symbols and labels, match symbols and their labels. (contributes to 80% mastery on course test)	Match the following flowchart symbols with their corresponding labels:

	Process/Procedure
	Decision
	Alternative Process/Procedure
	Document
	Terminator
	Manual Input
	Connector (on-page)
	Connector (off-page)
	Database

Objective	Mastery Test Question(s)
	 Delay
Given a complex flowchart (i.e. a flowchart including several decision points and branches), a case/scenario, and a list of possible outcomes (i.e., possible end points of the procedure), apply the flowchart to the case to select the appropriate outcome/end point. (contributes to 80% mastery on course test)	Flowchart of a laundry cycle – include washing "whites vs. colors," delicate items, items that do not go in the dryer, etc.
Given a simple procedure (e.g., few Yes/No decision points, no pre-defined procedures), create a basic flowchart to document the procedure (achieving a score of 80/100 on the objective flowchart evaluation).	Flowchart the Pharmacy Lookup procedure.
Given a value/cost procedure (i.e., a procedure with a "happy path" and variances from that path), create an opportunity flowchart to document the procedure achieving a score of 80/100 on the objective flowchart evaluation.	Flowchart the Prescription Data Entry procedure.
Given a deployment process/procedure (i.e., an integrated process with tasks performed by different players or departments), create a swim lane flowchart to document the procedure achieving a score of 80/100 on the objective flowchart evaluation.	Flowchart the Project Intake & Assignment procedure (include Instructional Design, Knowledge Management, & Training Delivery teams).
Given a complex procedure (e.g., a combination of serial and parallel decision points, criteria-based decision points, pre-defined procedures requiring off-page connectors), create a flowchart of appropriate complexity to document the procedure (achieving a score of 80/100 on the objective flowchart evaluation).	Flowchart the procedure to boil water. Make sure your flowchart works for various: • Amounts of water dependent on use (1 cup, 1 gallon, multiple gallons) • Heat sources (microwave, stove top, fire pit) • Skill levels of users ***Note:*** *We may select a different but equivalent case study, as we used this one during the pre-assessment.*

Learning resources Learners will have the following resources:

- The WBT courseware itself
- A job aid providing flowchart basics and best practices
- Criteria to evaluate a flowchart
- An annotated bibliography
- Visio software (flowcharting program)

Content issues

So far, a literature review is coming up long on symbols and their meaning, but short on techniques and strategies. The most promising resources so far are coming from Six Sigma, Project Management, and Computer Programming (Algorithms). Much of the content may need to be developed based on deriving rules through SME review of “good” and “bad” examples of flowcharts.

Project Management

Milestones

The following schedule presents the major milestones for this initiative:

Phase	Milestone	Course
Analysis	Analysis & Design Documents	IT5660
Design	Detailed Design Doc	IT5670
	Proof of Concept/Prototype	IT5670
	Formative Evaluation	IT5670
Development	Alpha Courseware & Materials	IT5680
Implementation	Beta Courseware & Materials	IT5680
Evaluation	Summative Evaluation (results of Level 1, Level 2, & Level 3 Evaluations)	IT5680
	Lessons Learned/Next Steps	IT5680

These phases are in alignment with the deliverable requirements in my organization.

Review support

The ID Team Manager (Ken Thomas) will serve as the primary SME, as well as the Lead Designer on this project. The KMS Team Manager, Rick Egdorf, will serve as an additional Subject Matter Expert (SME) for reviews.

The SMEs will coordinate formative discussions and reviews in line with current project development practices.

Implementation support

When the prototype is ready for deployment, a technical SME will be needed to help post the courseware to the appropriate site for CU access and review (ESI courseware is posted behind a firewall).

Should no resource be available, Rocky Mountain Alchemy (Ken Thomas' consulting company) will host the courseware off their site.

Approvals	As the ID Team Manager, Ken Thomas has authority to approve the project directly for pilot and implementation. Additional input and approvals will be needed by CU Instructors of the corresponding courses. Final rollout will be coordinated with managers of the KMS, P&P, & LDM Teams.
Organizational change issues	As previously discussed, this project is being welcomed with enthusiasm by members of the target audience and their managers. Since the ID Team Manager is responsible for rolling out professional development training to the target audiences, and often relies on WBT strategies & job aids, no major change management or promotion is required for this effort. The groups in jeopardy are the KMS and P&P Teams who have expressed a desire for an Instructor Led Training workshop to address the needs. The ID Team Manager will coordinate with managers of these teams to conduct a webinar AFTER learners complete the WBT to work through a couple of case studies.

Design (Part 1)

Instructional Design Model

Intro

This section describes the underlying philosophy of learning that will drive the design and development of this intervention.

Approaches to learning

There are three primary schools of learning (Mayer, 1999):

- Behaviorist (learning as response strengthening)
  - Learning occurs when the learner strengthens (or weakens) an association between a stimulus and a response (i.e., behaviorist point of view).
  - The designer creates situations to reinforce learners when they exhibit desired responses.
- Cognitivist (learning as knowledge acquisition)
  - Learning occurs when the learner places the new information in long-term memory.
  - The designer organizes and "presents" information to the learner through textbooks, lectures, online content presentations, etc. (i.e., cognitivist point of view, didactic/explicative instruction).
- Constructivist (learning as knowledge construction)
  - Learning occurs when the learner actively constructs a knowledge representation in working memory (i.e., constructivist point of view, cognitive approach).
  - The designer creates an environment in which the learner interacts meaningfully with the content, including fostering the learner's processes of selecting, organizing, and integrating information.

Our approach to learning

While our team sees application in all three schools, our approach to training is based on a constructivist philosophy. Learning occurs when the learner incorporates the new knowledge or skills into their existing schema through engaging and hands-on activities, allowing them to "construct" their new or expanded schema.

Note: To support our constructivist activities, we may provide well-organized presentations (cognitivist influence), and may provide simple drill-and-practice with rewards (behaviorist influence).

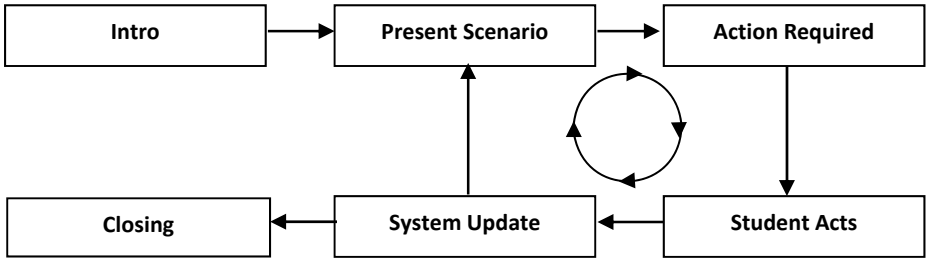
Instructional models

The primary models we will use for this intervention include:

- Absorb activities
  - Guided presentations
- Do activities
  - Drill-and-practice (e.g., flash-cards)
  - Case study
  - Guided analysis
  - Simulation (see model in next section below)
- Connect activities
  - Job aid
  - Original work (Level 3 project)

Simulation model

The simulation model we plan to use is a single path emulation based on the Alessi & Trollip (1985) simulation model:



Element	Description
Intro	Introduces the simulation by providing objectives, directions/instructions, and scenario opening.
Present Scenario	Establishes the context of the scenario. As the cycle continues through learner actions, the scenario updates.
Action Required	Based on the scenario, the learner is required to make a choice, react to an event, manipulate an object, or seek more information.
Student Acts	The learner performs the required action.
System Updates	After completing an action, the learner typically receives some level of feedback. The system update typically has an effect on the path of the scenario.

Element	Description
Closing	Provides a summary and typically an opportunity to try the simulation again. If used as an assessment, a summative feedback message is typically provided here.

Additional considerations

Although the use of flowcharting software (e.g., Microsoft Office Word or PowerPoint, Visio, Inspiration) is critical to on the job success, the actual teaching of software is beyond the scope of this intervention.

We will consider basic mastery of a common tool (in this case, Visio) as a pre-requisite to this course.

Learning Activities

Intro

This section describes how the intervention will be in alignment with the Common Instructional Values (CIVs) defined by the IT5660 -Spring '09 class members:

- Learner centered
- Social
- Contextual
- Active
- Supportive

Next, this section categorizes the primary course activities into the corresponding Absorb, Do, & Connect class.

Common Instructional Values (CIVs)

The following table explains how we plan to incorporate the CIVs, as defined by the IT5660 -Spring '09 class members:

Value	Strategies
Learner centered	• An introduction will relate the intervention to the learner's job (relevant, meaningful, & personal). • The learner will be provided with job aids and rubrics to support building and evaluating their own work. • The final project will apply directly to the learner's job function and environment.
Social	• A SharePoint site will be created to host: – Questions/discussions – Reflections – Learner works (e.g., Level 3 project) • Learners will be encouraged to partner on practices and hands on activities.
Contextual	• Case studies and simulations will be derived from real-world cases from the learners' environment, including: – Pharmacy Lookup procedure – Prescription Data Entry procedure – Project Intake & Assignment procedure (include Instructional Design, Knowledge Management, & Training Delivery teams)

Value	Strategies
	• Level 3 project will be directly related to the learner's job function and environment.
Active	Web-Based Instruction • The standard will be set for at least one interaction (not including Next/Back) every five screens. • Simulations/emulations will resemble (as closely as feasible) the actual software (Le., we will not use "demo" approaches -the learner will interact with screen captures as they would interact with the software). • Learners will use the course tools to create actual flowcharts to document live processes & procedures.
Supportive	• A scaffolded approach will be used, as the learner progresses from simple to complex cases. • Instructional text and prompts will provide clear instructions for navigating and completing activities. • Constructive feedback will be provided on the Level 3 project. • A SharePoint site will be created to allow learners to ask questions, request help, discuss problems, and share success stories.

Absorb, do, & connect activities

The following table describes and classifies the basic activities that will support each Terminal Learning Objective (TLO):

ID	Objective	Activity	Absorb	Do	Connect
1.0	Given a job aid that labels and describes commonly used flowcharting symbols and labels, match symbols and their labels.	Reference table	✓		
		Drill & practice (flash cards)		✓	

ID	Objective	Activity	Absorb	Do	Connect
2.0	Given a complex flowchart (i.e., a flowchart including several decision points and branches), a case/scenario, and a list of possible outcomes (i.e., possible end points of the procedure), apply the flowchart to the case to select the appropriate outcome/end point.	Web-Based Training (WBT) presentation (Guided analysis approach combined with a guided walkthrough)	✓		
		Case study			✓
		Practice/Simulation (learner walks through a case study and is guided through the procedure of building a flowchart in a simulated environment)		✓	
3.0	Given a simple procedure (e.g., few Yes/No decision points, no pre-defined procedures) create a detailed flowchart to document the procedure.	Web-Based Training (WBT) presentation	✓		
		Case study			✓
		Practice/Simulation (see treatment above)		✓	
4.0	Given a value/cost procedure (i.e., a procedure with a "happy path" and variances from that path), create an opportunity flowchart to document the procedure.	Web-Based Training (WBT) presentation	✓		
		Case study			✓
		Practice/Simulation (see treatment above)		✓	
5.0	Given a deployment process/procedure (i.e., an integrated process with tasks performed by different players or departments), create a swim lane flowchart to document the procedure.	Web-Based Training (WBT) presentation	✓		
		Case study			✓
		Practice/Simulation (see treatment above)		✓	
6.0	Given a complex procedure (e.g., a combination of serial and parallel decision points, criteria-based decision points, predefined procedures requiring off-page connectors), create a flowchart of appropriate complexity to document the procedure.	Practice/Simulation (see treatment above)		✓	

Bibliography

References

Alessi, S.M. and Trollip, S.R. (1985). *Computer-based instruction: Methods and development.* Englewood Cliffs, NJ: Prentice Hall.

Mayer, R.E. (1999). Designing instruction for constructivist learning. In C. M. Reigeluth (Ed.), *Instructional-design theories and models, Vol II: A new paradigm of instructional theory* (pp. 142159). Mahwah, NJ: Lawrence Erlbaum Associates.

Design (Part 2)

Typography

Fonts The following table illustrates the key type used in the site:

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Subtitle (Arial 18 bold) Text - Hex: #ffffff RGB: 255 255 255 Background-color - Hex: #004165 RGB: 0 65 101
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Footer & Navigation (Arial 12) Text - Hex: #ffffff RGB: 255 255 255 Background-color - Hex: #004165 RGB: 0 65 101

Color Scheme

ESI approved palettes

Express Scripts, Inc. requires use of one of three color schemes for all official products, internal and external:

- Primary
- Secondary
- Neutral/Gray

Since the flowcharts in the Knowledge Management System are developed using the Neutral/Gray Color Scheme, I plan to use that scheme for this courseware. I have added ESI's branded logo color to the courseware scheme.

ESI Neutral/Gray Color Scheme

Color Sample	Hexadecimal	RGB	Use
	#1E1E1E	30R-30G-30B	Screen text
	#B2B4B3	178R-180G-179B	tbd
	#B5ACA6	181R-172G-166B	tbd
	#BAC7C3	186R-199G-195B	Header background Fill color for images (e.g., flowcharts)
	#DCD6B2	220R-214G-178B	Fill color for images (e.g., flowcharts)
	#C7B37F	199R-179G-127B	tbd

ESI Logo Color

Color Sample	Hexadecimal	RGB	Use
	#004165	0R-65G-101B	Background for course title (top) and navigation (bottom) Page title text

White backgrounds

Although some designers recommend against white backgrounds to prevent computer monitor eye strain, there is plenty of research that indicates black text on a white background is the most desirable combination for both increasing readability (Hall and Hanna, 2004; Buchner and Baumgartner, 2007) and reducing eye strain (Wan, 2011).

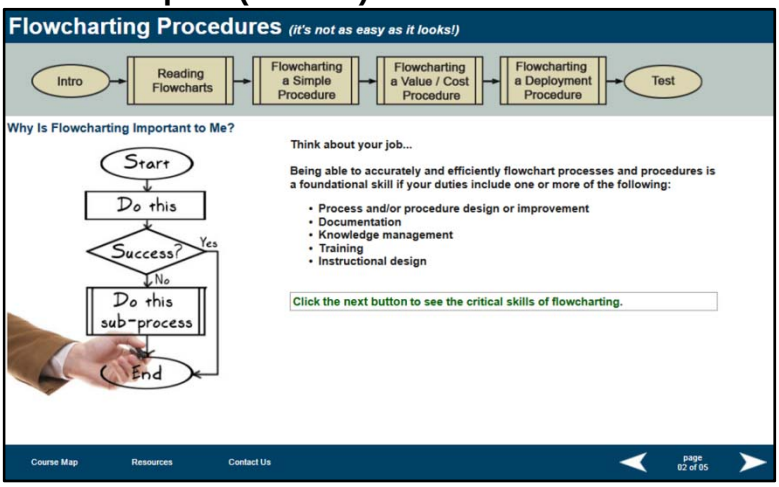
Note: *Wan cites recommendations from Dr. James Sheedy, Director of Optometry Research at Pacific University. Additional measures to reduce eye strain included using an LCD monitor with a reduced glare screen, which the employees of ESI have.*

In addition to the reasons above, ESI design standards for web pages (including online training) call for a white background with dark text. Graphics which are not defined by a square or rectangular border should also use a white background, allowing them to "float" on the screen.

Layouts for Absorb, Do, & Connect Activities

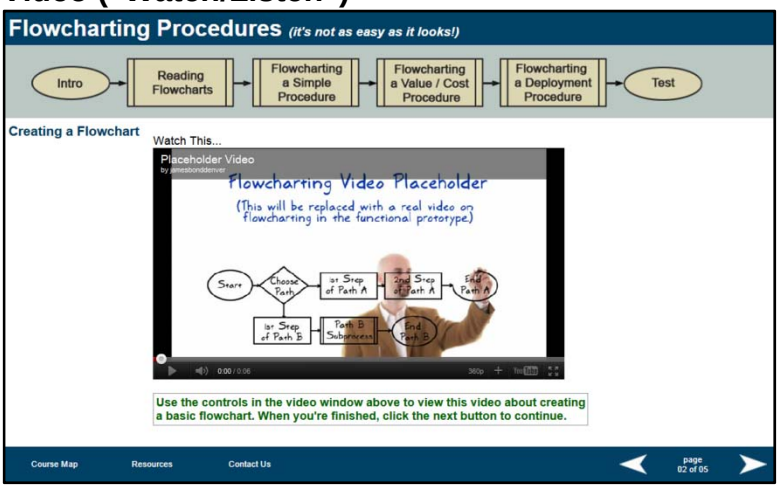
Absorb screens

Text & Graphic ("Read")



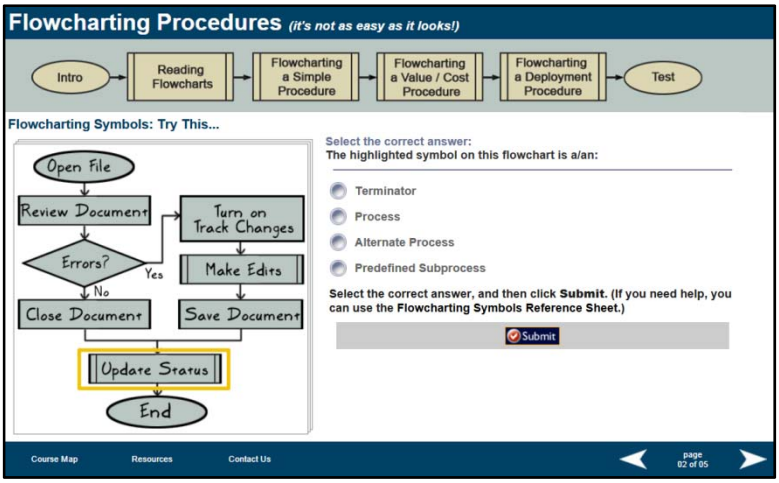
Note: *Text & Graphic screens will use the following layouts: graphic left / text right (as seen above), graphic right / text bottom, graphic top / text bottom, graphic bottom / text top, and full screen graphic.*

Video ("Watch/Listen")



Note: *A video placeholder will appear center screen with a prompt below. The learner will use the video controls in the frame to control the video, and have the option of making the video full-screen. The words "Watch this…" will appear above the video window. (Embedded YouTube videos will be used for all videos in the courseware.)*

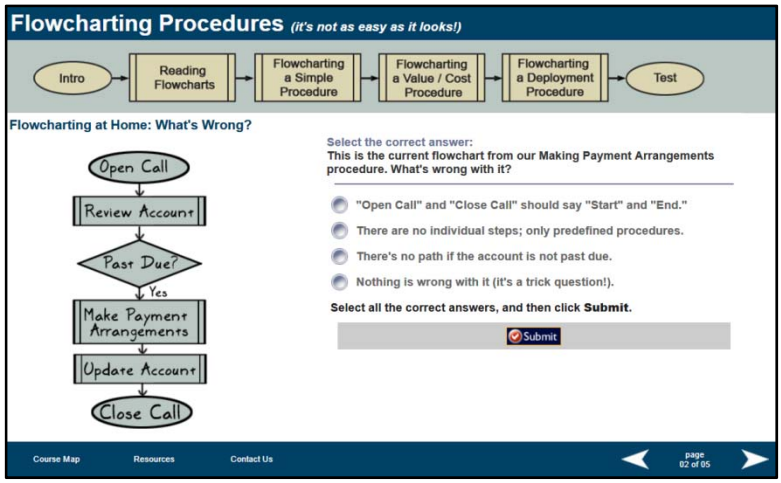
Do screens



Note: *Do screen layouts will adhere to the basic layouts of Absorb screens. In most cases, Do activities will include words in the page title such as, "Try This…"*

The above sample is a multiple choice interaction do activity – this particular screen is one of several "flash cards," where the flash cards appear on the left and the learner uses the multiple choice interaction on the right to identify the highlighted symbol on the flash card. In this case, the learner can access the job aid Flowcharting Symbols Reference Sheet by clicking on the direct link in the prompt or by selecting it via the Resources link in the navigation bar.

Connect screens



Note: *Connect screen layouts will adhere to the basic layouts of Absorb screens. In most cases, Connect activities will include words in the page title such as, "What's Wrong?," in which cases they are typically followed up*

with an activity asking the learner to fix the problem they've identified (in this case, the learner would be given the steps to follow for a paid or current account, then asked to draw the new flowchart, including the missing path).

Advanced Organizer

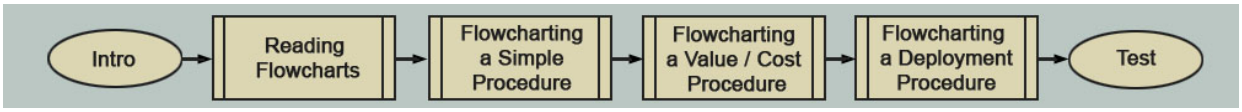
Course flow

The advanced organizer is actually a flowchart of the course. The flowchart illustrates the "Intro" and "Test" lessons as the terminators, and the lessons in between are shown as pre-defined procedures.

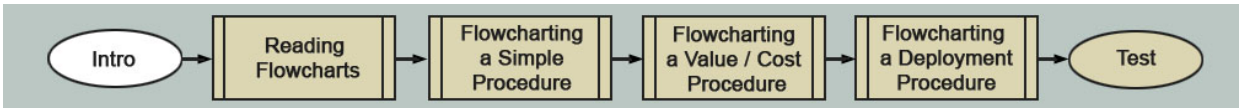
The advanced organizer serves two additional functions:

- The learner uses the flowchart to navigate to the desired lessons (this option is perpetually available).
- The flowchart highlights the current lesson in white to provide a constant "you are here" cue.
  - When the learner hovers over a lesson's symbol, the highlight changes to illustrate which lesson will be selected if the learner clicks on the highlighted lesson.

Default State



"Intro" Active



Design Prototype

Formative Evaluation Plan

Process

Evaluators will receive an email with a brief set of instructions and a link to the Design Prototype. The evaluators will navigate through the main pages (all non-available pages or functions will display a "page not available for the prototype" message).

The final page of the design prototype will include a link to a Zoomerang survey consisting of Likert scale questions and open comment fields to capture feedback and suggestions. This will allow me to collect and review the feedback in a consolidated format and allow evaluators to remain anonymous during their feedback session.

At the conclusion of receiving all comments, I will submit a revision plan to the same team.

Evaluators

The evaluators for the Design Prototype will include:

- At least one member from the stakeholders
- Members of the target audience
- Other instructional designers with interface and WBT development experience

Questions

1. What is your overall reaction to the prototype?
    a) I dislike it a lot and suggest the following changes…
    b) I dislike it and suggest the following changes…
    c) It's okay but would be better if…
    d) I like it but suggest the following changes…
    e) I like it a lot because…

    Comments:_____

2. How do you feel about the color scheme?
    a) I dislike it a lot and suggest the following changes…
    b) I dislike it and suggest the following changes…
    c) It's okay but would be better if…
    d) I like it but suggest the following changes…
    e) I like it a lot because…

Comments:_____

3. The goal of the home page is to gain attention and build interest. Does the home page achieve this goal?
    a) Not at all – I suggest the following changes
    b) Not really – I suggest the following changes
    c) It's okay but would be better if…
    d) Yes but would be better if
    e) Absolutely because…

Comments:_____

4. What are your thoughts on the fonts used in the course and page titles?
    a) Impossible to read – I suggest the following changes…
    b) Difficult to read – I suggest the following changes…
    c) Neutral – I suggest the following changes…
    d) Easy to read but would be better if
    e) Very easy to read because…

Comments:_____

5. What are your thoughts on the fonts used in the body of the pages?
    a) Impossible to read – I suggest the following changes…
    b) Difficult to read – I suggest the following changes…
    c) Neutral – I suggest the following changes…
    d) Easy to read but would be better if
    e) Very easy to read because…

Comments:_____

6. What are your thoughts on the layouts of the screens?
    a) I dislike them a lot and suggest the following changes…
    b) I dislike them and suggest the following changes…
    c) They're okay but would be better if…
    d) I like them but would be better if…
    e) I like them a lot because…

Comments:_____

7. What are your thoughts on the job aid?

a) I dislike it a lot and suggest the following changes…
b) I dislike it and suggest the following changes…
c) It's okay but would be better if…
d) I like it but would be better if…
e) I like it a lot because…

Comments:_____

8. Do you have any additional feedback on the Design Prototype?

   Comments: _____

Revisions

Intro

The overall feedback on the Design Prototype was positive, and some improvements were suggested. This section highlights the changes to be incorporated into the Functional Prototype based on the results of the Design Prototype.

Note: *More detailed feedback and responses are located in Appendix A: Design Prototype Feedback.*

Comments and responses

The following table lists key comments from the evaluation survey and the designer's responses to those comments:

Comment	Response
There may be confusion between the menu area and the instructional window	Discussion: This doesn't seem to be a prevalent problem, but is easily addressed without major impact to the interface. Solution: Add a dark line between the regions to increase the clarity of the separation.
Spacing problem on video page –prompt appears below the line.	Discussion: The course runs at the size the browser opens, which results in uncontrolled variations. This is causing the problem experienced by some users on the video page. Solution: Launch the course in a new window of a set size without user loaded browser menus and options.
Link to the job aid was unclear that it was a link.	Discussion: Agreed. Solution: Create a new style for in-text links.
I prefer vertical flowcharts to horizontal ones.	Discussion: Vertical flowcharts over 5 steps would require scrolling. Maybe examples in full-page PDF documents could be added down the road.

Comment	Response
	Solution: Leave as is for now.
Job aid color standards should match the wbt standards.	Discussion: Agreed. Solution: Color accordingly.
Feedback says, “click close then click next” – I didn’t have to click close.	Discussion: Agreed. Solution: Change feedback on correct and 2nd try incorrect to “Click the Next button to continue.”

Functional Prototype

Content

Content inventory The following table is a subset of the course's Content Inventory for Terminal Learning Objective (TLO) 1.0:

TLO 1.0: Given a job aid that labels and describes commonly used flowcharting symbols and labels match symbols and their labels. (Contributes to 80% mastery.)

Inventory Item	Description
Interesting introduction	An overly complex, intentionally intimidating flowchart will be displayed on the screen along with text pointing out how important it is to recognize and use the standard flowchart symbols. This intro should accomplish the following purposes, as identified in Horton: • Confirm the selected topic (along with the highlighted lesson symbol in the main menu). • Orient learners to the topic. • Set the context for the rest of the content in the topic. • Motivate deeper study of flowchart symbols.
Description of the content	Introduction to and overview of: • Common symbols used in flowcharting (e.g., terminators, processes, decisions) • Sub-processes • Connectors
Existing content	There is a great deal of off-the-shelf content on flowcharting symbols. I will especially be leveraging the content from "Flowcharts Plain & Simple" by Oriel.
Associated images, charts, visuals	The introductory image will be a complex flowchart to emphasize the importance of using standard symbols. There will be introductory videos used to introduce common symbols, sub-processes, and connectors. These will be in a style inspired by Common Craft (known for such videos as "Twitter in Plain English") and RSA Animate (known for such videos as "Sir Ken Robinson – Changing Education Paradigms").

Inventory Item	Description
Existing images	I've already created a collection of basic symbols in Photoshop for the flowchart symbols job aid (flowchart symbols are fairly standardized, so I'm using Flowcharts Plain & Simple as the main source for the look and feel). Other than that, I will have to create all images (including videos
Job aid	A job aid with representative images of the main symbols with corresponding descriptions will be used to help the learner achieve the objective.
Existing job aid	There are many similar job aids available to use as reference; I have leveraged these to create one using the course standards.
Activity 01	☑ Absorb ☐ Do ☐ Connect Watch video: Intro to Common Flowcharting Symbols. A narrated video showing the construction of a basic flowchart explaining how each symbol has a specific meaning/use.
Activity 02	☑ Absorb ☐ Do ☐ Connect Watch video: Intro to Flowcharting Sub-Processes. A narrated video showing how a set of symbols may be combined to create a sub-process.
Activity 03	☑ Absorb ☐ Do ☐ Connect Watch video: Intro to Flowcharting Connectors. A narrated video showing how connectors and arrows allow you interpret the flow of a flowchart.
Activity 04	☐ Absorb ☑ Do ☐ Connect Match flowchart symbol to its label. The learner will be given a basic flowchart with a highlighted image, and will select from a multiple-choice interaction the label of the highlighted symbol. The learner will use the flowchart symbol job aid to complete this activity.
Mastery test question(s)	See Activity 04.
Notes or comments	The videos will be available via YouTube and will use embedded YouTube for this courseware. Should the course be delivered behind a firewall, the videos can be loaded on a local server instead.

Navigation

Intro

Although the navigation was functional in the Design Prototype, that was not the focus of the evaluation. This section describes the basic navigation decisions made for the courseware, as available in the Functional Prototype.

Navigation mechanisms

The following table describes the navigation mechanisms (as defined in Horton, 2006) used in the flowcharting course:

Navigation Mechanism	Application
Menu – Constantly Displayed	The advanced organizer of a flowchart, listing the intro, lessons, and test, also serves as a perpetual menu. Clicking a lesson's image accesses the first page of the corresponding lesson. The active lesson is highlighted, serving as a "location indicator."
Paging	Left and right arrows at the bottom right of the screen work to navigate to the next and back pages. Page x of y are displayed to convey the learner's progress within the lesson.
Course Map	A link to the Course Map appears in the bottom left of the course window. The Course Map is a one-page view of the course's main pages; each listed page is a link directly to that page or the first page of a topic.

Note: *The course is designed as a stand-alone course. The navigation is "hand-built," and does not leverage LMS or other functionality.*

Formative Evaluation Plan

Process

The same process will be leveraged as used for the Design Prototype. Evaluators will receive an email with a brief set of instructions and a link to the Functional Prototype. The evaluators will navigate through Lesson 2 and asked to access some of the main navigation options (e.g., the Course Map) – all non-available pages or functions will display a "page not available for the prototype" message.

The final page of the prototype will include a link to a Zoomerang survey consisting of Likert scale questions and open comment fields to capture feedback and suggestions. This will allow me to collect and review the feedback in a consolidated format and allow evaluators to remain anonymous during their feedback session.

Evaluators

The following evaluators have been selected to review the Functional Prototype:

Name	Role	Notes
Rick Egdorf	Stakeholder	Rick leads the Knowledge Management Team, and is a SME
Angela Nelson	Instructional Designer	Angela is an Instructional Designer who specializes in WBT design / development
Jacquie Alexander	Instructional Designer	Jacquie is an Instructional Designer who specializes in job aid design (including procedure documentation)
Monty Lackey	Target Audience	Monty is an Instructional Designer who will benefit from a course on flowcharting

Questions

1. What is your overall reaction to the prototype?
    a. I dislike it a lot and suggest the following changes…
    b. I dislike it and suggest the following changes…
    c. It's okay but would be better if…
    d. I like it but suggest the following changes…

e. I like it a lot because…

Comments:_____

2. How do you feel about the main menu navigation (the top flowchart)?
    a. I dislike it a lot and suggest the following changes…
    b. I dislike it and suggest the following changes…
    c. It's okay but would be better if…
    d. I like it but suggest the following changes…
    e. I like it a lot because…

Comments:_____

3. How do you feel about the page to page navigation (the Next/Back buttons and page numbers at the bottom right)?
    a. I dislike it a lot and suggest the following changes…
    b. I dislike it and suggest the following changes…
    c. It's okay but would be better if…
    d. I like it but suggest the following changes…
    e. I like it a lot because…

Comments:_____

4. How do you feel about the Course Map navigation?
    a. I dislike it a lot and suggest the following changes…
    b. I dislike it and suggest the following changes…
    c. It's okay but would be better if…
    d. I like it but suggest the following changes…
    e. I like it a lot because…

Comments:_____

5. How do you feel in general about the videos?
    a. I dislike them a lot and suggest the following changes…
    b. I dislike them and suggest the following changes…
    c. They're okay but would be better if…
    d. I like them but suggest the following changes…
    e. I like them a lot because…

Comments:_____

6. How do you feel about the job aid?
    a. I dislike it a lot and suggest the following changes…
    b. I dislike it and suggest the following changes…
    c. It's okay but would be better if…
    d. I like it but suggest the following changes…
    e. I like it a lot because…

Comments:_____

7. Here is the objective of the lesson you reviewed: "Given a job aid that labels and describes commonly used flowcharting symbols and labels match symbols and their labels." Did the lesson achieve this objective?
    a. Not at all – I suggest the following changes. . . .
    b. Not really – I suggest the following changes. . . .
    c. It's okay but would be better if…
    d. Yes but would be better if . . . .
    e. Absolutely because…

Comments:_____

8. Did the interaction (i.e., the multiple choice question asking you to identify the label of the highlighted symbol) demonstrate mastery of the objective?
    a. Not at all – I suggest the following changes
    b. Not really – I suggest the following changes
    c. It's okay but would be better if…
    d. Yes but would be better if
    e. Absolutely because…

Comments:_____

9. Do you have any additional feedback on the Functional Prototype (accuracy of the content, correct knowledge level, helpful content, etc.)?

    Comments: _____

EdWeb Reflections

Reflections

Intro

This section answers the reflection questions asked at the Functional Prototype phase of the project.

Question 1

How are you feeling about your EdWeb?

I'm happy with the look and feel of the courseware. I feel the completed course will serve to help the target audience to learn the basics of flowcharting, and will have an immediate impact on their job skills.

I would like to have a better handle on developing testing interactions and sending data to an LMS, but know I have that capability available in the LCMS tools I can use on my major projects.

Question 2

What is the most important thing you have learned about designing and developing eLearning instruction?

eLearning is typically delivered without the presence of an instructor, so must be instantly engaging to the learner, and must be intuitive to use. This does not happen by sitting down at the computer and start building pages; it happens through careful planning.

eLearning should be developed in alignment with dual coding theory and best practices. Many rookie designers will put a decorative graphic on a screen thinking they've achieved dual coding, however they have missed the point. A decorative graphic may actually distract the learner; the goal is to use instructional or representational graphics in conjunction with your text (and/or audio). Also, audio should not be a direct word-for-word dictation of the text on the screen, as this will result in the learner "tuning out" and losing the benefits of dual coding. An example of a good use of audio is use the audio to provide the detailed message, while synching key words or phrases to display on the screen to support the audio message.

Engagement can be achieved through demonstrating the need

for the information (in alignment with Adult Learning Theory, demonstrate how the material applies to the learner's situation). Engagement is also accomplished through interesting interactions, including "absorb," "do," and "connect" interactions.

Finally, the most important aspect of any instruction is that it is all designed, built, and implemented for the target audience. While the designer should have fun building it, it is the learner who must be engaged by the courseware.

Question 3

If you could travel back in time to the beginning of the semester, what would you do differently in terms of your EdWeb?

Other than interfering projects and business crises, the main thing that has worked as a personal obstacle on this project is that the approach is different than the one I've used for the last 20 years. While there are strong similarities and the outcomes match, it's been challenging working through tools like Content Inventories, as well as multiple review cycles.

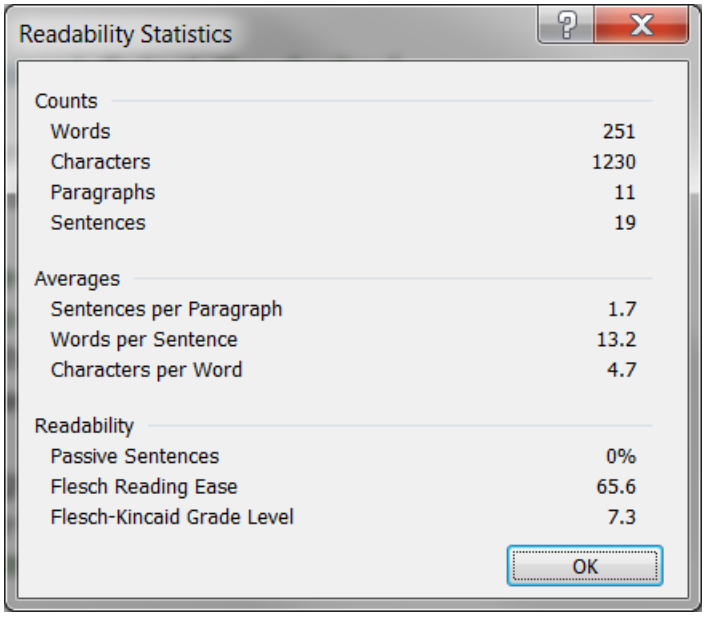
Getting into my time machine and returning to the beginning, I'd approach the project without trying to connect or translate between how I build eLearning and how the course project is organized.

Readability

Readability Statistics

Reading ease and grade level

Screen text from the Functional Prototype was copied into Microsoft word and processed by the readability tools. The results are shown below:



Interpretation and reflection

Both the Flesch Reading Ease and Flesch-Kincaid Grade Level results show the course is written so that learners ages 13 to 15 can easily read the courseware.

Note: *Short sentences with smaller words result in higher readability scores, meaning they are easier to read. For the most part, the conversational tone of the Flowcharting course fits that description.*

Since the target audience for this course is comprised mostly of college graduates, the current readability is acceptable, and the tone reflected in the Functional Prototype should remain the model for future development.

Visual Analysis

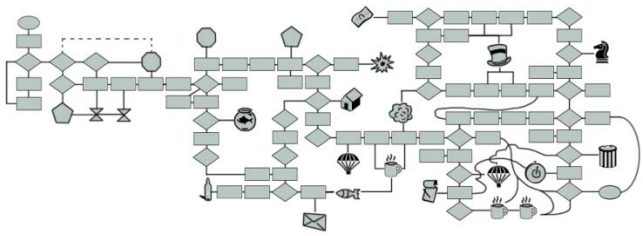
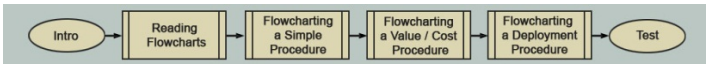
Graphic Functions in the Flowcharting Procedures Course

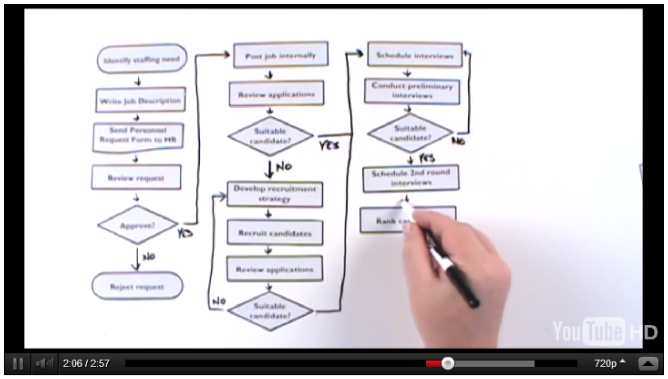
Instructional functions

Graphics can serve one or more of the following functions:

- Decorative
- Representative
- Organizational
- Interpretive
- Transformational

The following table categorizes the graphics used in the Flowcharting Procedures course:

Graphic	Categorization
 ***Reading Flowcharts: page 1***	**Decorative** At first, the graphic seems to be representational, however as you start noticing incorporation of fishbowls, top hats, parachutes, and coffee mugs, the learner should be surprised, gaining their attention.
 ***Main Menu (Perpetual)***	**Organizational** This graphic is the advanced organizer, illustrating the organization of the courseware.
 ***Intro: page 2***	**Representative / Interpretive** The image is a flowchart (representative), but also clarifies how a flowchart can present a basic process. (The addition of the hand drawing the flowchart could add to the decorative nature of the image.)

Graphic	Categorization
 ***Reading Flowcharts: pages 3, 6, 7, & 8***	**Representative** The image shows a simplified picture of the main job aid and is labeled "Job Aid." Clicking on this image wherever it appears in the course displays the Flowchart Symbols Job Aid.
 ***Common Symbols Job Aid: Resources / Flowcharting Symbols Reference Sheet***	**Representative** The actual flowchart symbols themselves are representative of the elements of the process or procedure they are documenting (a rectangle represents a procedure, a diamond represents a decision, etc.).
 ***Reading Flowcharts: pages 2, 4, & 5***	**Representative** The videos used in the Functional Prototype all build basic flowcharts to illustrate the process of building one. As each element is added to the flowchart, the audio (rather than text) explains what it is.

Reflection

The primary use of graphics in this "how to" course is to demonstrate the creation of flowcharts, which are themselves "representational" of the processes or procedures they define. It is not surprising to see a majority of the graphics fall into the representational category.

To some extent, a "decorative" nature was added to the graphics to gain and maintain learners attention in what can be a boring subject.

Dual Coding

Examples of Dual Coding in the Flowcharting Procedures Course

Introduction

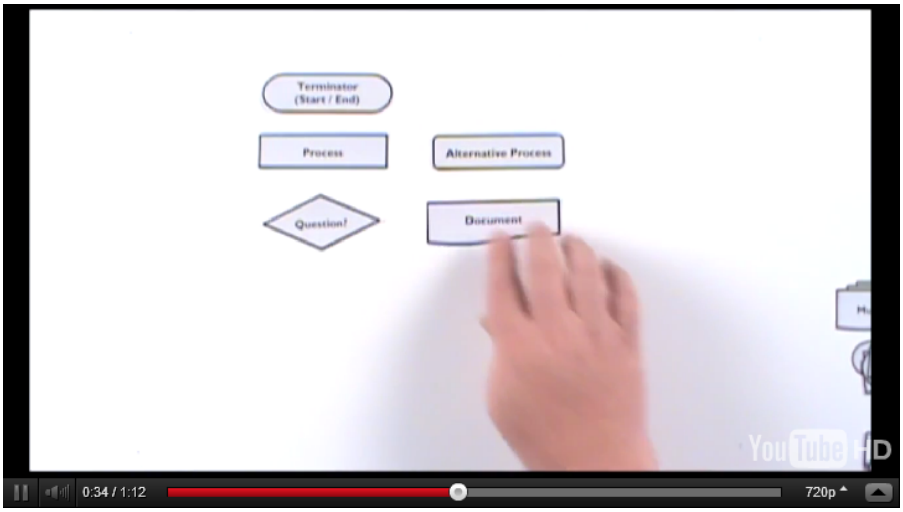
Dual Coding Theory (Paivio, 1991) boils down a simple idea: delivering an instructional message through two or more memory systems increases the likelihood that information can be retained and retrieved later (Thomas, 2011).

In application, a graphic (visual memory system) combined with text and/or audio (verbal memory system) has a greater chance of creating meaningful learning (i.e., has a greater likelihood of being remembered and recalled) than either a graphic or text alone.

Dual coding examples

The Flowcharting Procedures course contains the following examples of dual coding:

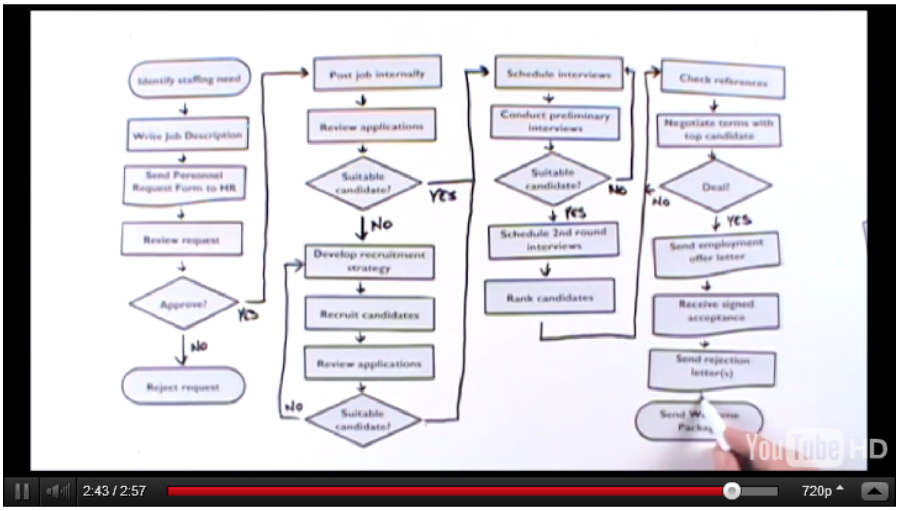
Common Symbols Video



Reading Flowcharts: page 2

In the Common Symbols video, each represented symbol (a graphic itself) is labeled with text and further called out with synchronized audio narrating what the symbol is called and describing the use of that symbol. So the symbol (visual) is combined with the text and audio (verbal) demonstrating dual coding.

The Hiring Process Video



Reading Flowcharts: page 4

Similar to the Common Symbols leveraging of Dual Coding Theory, The Hiring Process video builds a graphic representation (a flowchart) of the hiring process, while audio narration explains each step of the process. So, while applying what they just learned in the Common Symbols video, the learner is watching the building of the process flowchart (visual) while listening to the narrator explain this process (verbal).

Job Aid Icon

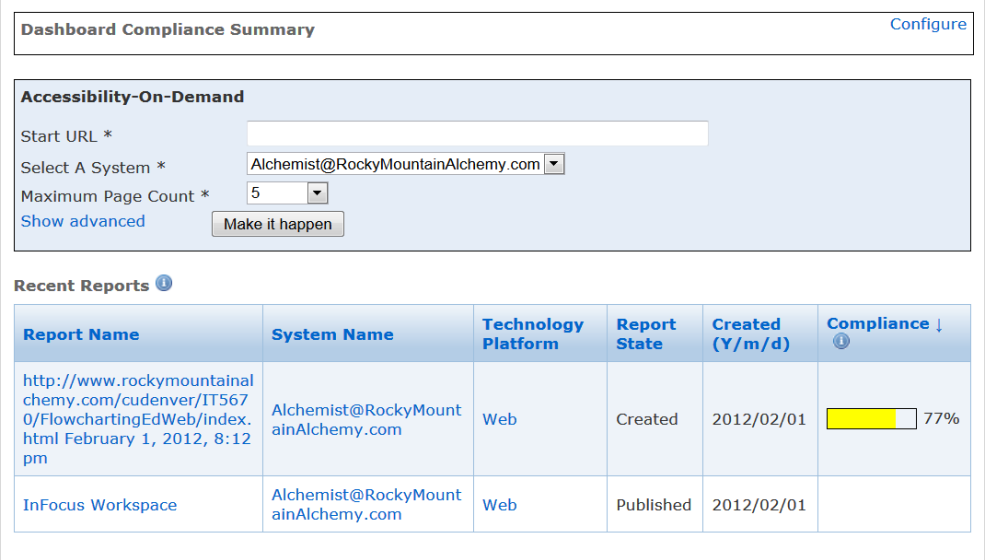
Reading Flowcharts: pages 3, 6, 7, & 8

Verbal content is not limited to audio; text is also considered part of the verbal memory system. So something as simple as the graphic representation of the Common Symbols Job Aid (visual) labeled “Job Aid” (verbal) is also an example of dual coding leveraged in the Flowcharting Procedures course.

ADA Accessibility

Americans with Disabilities Act

Results of test The results from the SSB BART Group accessibility test appear below:



Dashboard Compliance Summary Configure

Accessibility-On-Demand

Start URL *

Select A System * Alchemist@RockyMountainAlchemy.com

Maximum Page Count * 5

Show advanced Make it happen

Recent Reports

Report Name	System Name	Technology Platform	Report State	Created (Y/m/d)	Compliance ↓
http://www.rockymountainalchemy.com/cudenver/IT5670/FlowchartingEdWeb/index.html February 1, 2012, 8:12 pm	Alchemist@RockyMountainAlchemy.com	Web	Created	2012/02/01	77%
InFocus Workspace	Alchemist@RockyMountainAlchemy.com	Web	Published	2012/02/01	

§ 508-1194.21 Software Applications and Operating Systems

Compliance charts show the compliance rate based on the number of modules that do not contain the violation divided by the total number of modules. The Total Points column converts the compliance rate for each paragraph/checkpoint to a point value out of a possible ten points. Each individual total point value is then combined for an overall point value for the report.

Total: 100 / 100

Edit [e] | View [v]

Name ↑	Modules	Total Points	Compliance Rate
(a) Ensure keyboard control of application	0 / 0	20 / 20	100%
(b) Applications shall not disrupt or disable accessibility features	0 / 0	10 / 10	100%
(c) On-screen & programmatic indication of focus	0 / 0	6 / 6	100%
(d) Information about a user interface element must be textually available	0 / 0	18 / 18	100%
(e) Use images in a standard fashion	0 / 0	2 / 2	100%
(f) Textual information shall be provided through operating system functions	0 / 0	15 / 15	100%
(g) Applications shall not override user selected contrast and color selections.	0 / 0	3 / 3	100%
(h) Ensure information is displayable without animation	0 / 0	3 / 3	100%
(i) Color not the only means of conveying information.	0 / 0	5 / 5	100%
(j) Color settings control	0 / 0	3 / 3	100%
(k) Do not use flashing or blinking elements	0 / 0	3 / 3	100%
(l) Ensure usability of electronic forms	0 / 0	12 / 12	100%

Addressing ADA compliance

While the courseware does many things right (not relying only on color to convey information, not disabling accessibility tools, etc.), the courseware faces many challenges in making the training Section 508 compliant.

Some of the low hanging fruit solutions I could incorporate include:

- Provide alt text tags for my graphics and image maps.
- Provide a script to the videos or an alternate method.

Reflections

None of my clients require ADA compliance for their courseware. One of my clients hires interpreters for the hard of hearing to come in when needed to work with hearing impaired learners, and another has a separate workstation with an extra-large monitor for visually challenged employees.

This isn't surprising in my primary client environment, as most of my client base is call center. Visually challenged persons would find a very steep uphill set of challenges working phones with customers while navigating through countless systems trying to find the answers to customer questions and problems. The data entry function, on the other hand (part of the typical call center) lends itself rather nicely to the hearing impaired, as the job is typically all visual and rarely requires customer interaction over the phone.

Imposing 508 compliance can be costly – it requires programmers who understand the impact of using various tools, or "dumbing down" your design to make it compliance friendly. You are typically forced to either create and maintain two versions of every piece of courseware, or you are left providing one-on-one coaching to the employees requiring additional support. Believe it or not, it's actually cheaper to provide that one-on-one coaching in almost all cases.

Learnings

Philosophically, it is difficult to openly state that you choose not to comply with ADA and Section 508 in the design of your courseware. However, without the time, budget, or resources, my own personal skill-set is limited to some of the most basic strategies.

Future Plans for the EdWeb

The Future of the Flowcharting Procedures Course

The reality

Since I no longer work for the company who had requested the course in the first place, and since the urgency for this course was replaced mid-stream by completely different priorities, I doubt the course will ever be finished and deployed in a life environment.

If a client wanted me to conduct flowcharting, I would most likely offer a life workshop as opposed to trying to finish and market this courseware. So the sad reality is that this courseware really has no future other than serving as a sample in my ILT program portfolio.

Not all doom and gloom

Through the activities of this course, I have become much more confident in CSS, and have already had the opportunity to leverage that knowledge in two client bases. One client even asked for a brief demonstration how CSS could benefit their HTML Knowledge Management System environment.

Also, through the research for this course, I came across some excellent resources for flowcharting, which I have already recommended to peers who do flowcharting extensively in their professions.

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Appendix A: Design Prototype Feedback

INTE5670 Design Prototype Feedback (Zoomerang Survey)

Question 1: What is your overall reaction to the prototype?

1	I dislike it a lot and suggest the following changes...	0	0%
2	I dislike it and suggest the following changes...	0	0%
3	It's okay, but would be better if...	0	0%
4	I like it but would be better if...	2	50%
5	I like it a lot because...	2	50%

Comments:

there were more separation between the flow chart graphics. Between the flow chart menu in the header to the flow chart graphics on different pages, a learner could possibly be confused about where to click (what's an image vs. what's a navigational tool). Ken Response: This doesn't seem to be a prevalent problem, but is easily addressed without major impact to the interface. I experimented with more separation strategies (space and lines), but I feel the darker background color in the header region is enough.
The layout, format and color scheme are appealing and enhance the use factor.
General Comments:• Main Page• Your course title… the words: "it's not as easy as it looks!"; they're cute, funny, and a de-motivator.• I like the handwriting-on-glass technique for the instruction sequence.• Intro (page 1)• Next Button: I couldn't tell initially that I was activating the button when doing a hover-over…recommend a brighter alternate color or even a contrast "glow" instead.• Intro (page 2)• I could almost place the actor who provided the voice-over for the video but the name escapes me… must be a famous person though.• I read the instructions for the video as far as using the controls in the window above… after the video, I sat there waiting…then finally read the second half of the instructions. Recommend they update/change after video to prompt using "the next button to continue". Ken Response: I was able to change the coding to start the video upon page load and stop the "related videos" from displaying. I feel this simplified the instructions (I couldn't find a way with my current approach to test whether the video was finished playing to trigger different instructions. • Intro (page 3)• Add change-state colors to the buttons when doing a hover-over…looks really cool.• I looked all over for the Flowcharting Symbols Reference Sheet but couldn't find it.

Ken Response: I added an icon to directly access the Job Aid to replace the need to find it. • I recognize the question processes code □ .o Correct Feedback box CLOSE link is fuzzy for some reason… It clears up when you hover-over. Looks like a layer mismatch?• Page allows me to skip past the question without answering it.• Intro (page 4)• Inconsistent image background… first question looked like it was the top sheet of a stack of papers… this one doesn't.• Wrong question interaction code… allows multiple button selection for a question with only 1 correct response. Ken Response: Reviewer didn't understand the concept of "flash cards," since there was only one. Will see if there's a similar experience when they complete 3 flash card interactions in the FP.
Clean pages, not overwhelmed with content. Nice graphics - interesting / different. Good interaction and variety of activities (watch, try, think).

Question 2: How do you feel about the color scheme?

1	I dislike it a lot and suggest the following changes...	0	0%
2	I dislike it and suggest the following changes...	0	0%
3	It's okay, but would be better if...	0	0%
4	I like it but would be better if...	1	25%
5	I like it a lot because...	3	75%

Comments:

Clear, easy to read.
Easy on the eyes. Subtle, yet effective. Great contrasting color scheme. Dark blue for page title, gray-blue for the bread crumb area provide a great non-invasive top border. They do not take control of my eyes, as they should not. My eyes are drawn to the white area, where the real information is located.
The green font on the bottom of page two was easier to read. It's a little hard to read on top of the blue background. Otherwise, I like the colors - the go nicely together, don't distract, and look professional. Ken Response: Agreed. I've selected a darker green for the FP.
(no answer)

Question 3: The goal of the home page is to gain attention and build interest. Does the home page achieve this goal?

1	I dislike it a lot and suggest the following changes...	0	0%
2	I dislike it and suggest the following changes...	0	0%
3	It's okay, but would be better if...	0	0%
4	I like it but would be better if...	0	0%
5	I like it a lot because...	4	100%

Comments:

The graphic with the figure writing from "behind the screen" is interesting, and I liked that the lesson menu is actually a flow chart.
I'm a huge proponent of flowcharting. However, many flowcharts lack an introduction, an explanation for being. This one captured my attention.
See title comment above. I would change it to say something that tells me I WILL be a master of flowcharting by using this training...
Just by looking, without reading anything, you have a good sense of what the course is about. The graphic is interesting - plus, it makes me want to learn to write backwards like the guy in the pic :). Ken Response: I was curious if anyone would catch that the person in the graphic would have to be writing backwards…

Question 4: What are your thoughts on the fonts used in the course and page titles?

1	Impossible to read and I suggest the following changes...	0	0%
2	Difficult to read and I suggest the following changes...	0	0%
3	Neutral and I suggest the following changes...	0	0%
4	Easy to read but would be better if...	0	0%
5	Very easy to read because...	4	100%

Comments:

Liked the "handwriting font" from the title page. Solidified that often the beginning stages of flow charting is a manual process.
Studies prove that sans serif fonts are easiest to read on computer screens, so that is perfect for the title and bread crumb area.
I didn't have any issues / feedback during initial review. Very easy to read - good size, color.
(no answer)

Question 5: What are your thoughts on the fonts used in the body of the pages?

1	I dislike it a lot and suggest the following changes...	0	0%
2	I dislike it and suggest the following changes...	0	0%
3	It's okay, but would be better if...	0	0%
4	I like it but would be better if...	1	25%
5	I like it a lot because...	3	75%

Comments:

Clear, sharp fonts in an appropriate size.
A very nice artistic flare using a hand written emulating font. It captures my interest, yet is easy to read. It provides an implied separation from the instructions, which are sans serif.
For me and my eyes...the green lettering is hard to focus on. Ken Response: Agreed – a darker color green was selected for the FP.
Very easy to read - good size, color. The link to the job aid - flowcharting symbols reference - on page 3 doesn't stand out. Unless I actually mouse over it, I don't realize it's a link. Ken Response: Agreed. Changed the links to a button, which I think should solve the issue.

Question 6: What are your thoughts on the layouts of the screens?

1	I dislike them a lot and suggest the following changes...	0	0%
2	I dislike them and suggest the following changes...	0	0%
3	There're okay, but would be better if...	0	0%
4	I like them but would be better if...	2	50%
5	I like them a lot because...	2	50%

Comments:

I prefer to see the flow chart graphics horizontally with the questions at the bottom. Ken Response: The screen constraints don't allow that unless working with a very simple flowchart.
Overall lovely, but page 2 of 5 had the green text overlapping the footer area, making it a bit hard to read. Ken Response: This is a problem if the learner opens the window too small – I changed the FP by adding a launch button that opens the window at the recommended size to prevent this overlap.
Clear, consistent placement of images / text. Easy to follow, know what to expect, but doesn't get boring with different graphics on each page.
(no answer)

Question 7: What are your thoughts on the job aid?

1	I dislike it a lot and suggest the following changes...	0	0%
2	I dislike it and suggest the following changes...	0	0%
3	It's okay, but would be better if...	0	0%
4	I like it but would be better if...	2	50%
5	I like it a lot because...	2	50%

Comments:

I must have missed this.
Assuming you mean the hand written flow chart, love it!
Since this question was here... I went back and started hitting all kinds of buttons. Found the resource. I would color them like the images in the WBT. Ken Response: Agreed – done.
Simple, easy to follow. May want to include a print option for users that want to print for future reference. Ken Response: The standard IE Print function works fine.

Question 8: Do you have any additional feedback on the Design Prototype?

Comments:

Nicely done. Nice technique to use flow charting to teach flowcharting. Looking forward to the finished product and also one using a real world application.
I like the overall theme...using the flowchart to teach/navigate the flowchart.
The feedback on the questions indicates to "click close, then next." Closing the feedback before next isn't required. May want to remove the "Click close" statement on the correct feedbacks to minimize clicks for the learner. Looks like a great prototype! Ken Response: Agreed on the “click close” – all Correct and 2nd Try Incorrect feedbacks have been revised for the FP.
(no answer)

Appendix B: Functional Prototype Feedback

INTE5670 Functional Prototype Feedback (Zoomerang Survey)

Question 1: What is your overall reaction to the prototype?

1	I dislike it a lot and suggest the following changes...	0	0%
2	I dislike it and suggest the following changes...	0	0%
3	It's okay, but would be better if...	0	0%
4	I like it but would be better if...	1	25%
5	I like it a lot because...	3	75%

Comments:

it clearly explained concepts, was easy to use, employed cool videos.
Video size is too small to follow labels on your flowchart... Ken Response: Agreed… this is why I provided such detailed narration while building the flowcharts. My camera isn't adequate to capture "fine" text. I'll keep the videos more "conceptual" and rely on static images to convey any content that requires being able to actually read the text.
It's clear, simple, easy to navigate.
it targets many different learning styles

Question 2: How do you feel about the main menu navigation (the top flowchart)?

1	I dislike it a lot and suggest the following changes...	0	0%
2	I dislike it and suggest the following changes...	0	0%
3	It's okay, but would be better if...	0	0%
4	I like it but would be better if...	1	25%
5	I like it a lot because...	3	75%

Comments:

it recalled the topic nicely.
No changes.
Easy to follow, nice visual, graphic matches content of course.
great navigation tool. Might suggest highlighting the symbol I'm currently viewing Ken Response: This was an error, as part of the design was to have the active lesson highlighted. This has been fixed and already reposted.

Question 3: How do you feel about the page to page navigation (the next/back buttons and page numbers at the bottom right)?

1	I dislike it a lot and suggest the following changes...	0	0%
2	I dislike it and suggest the following changes...	0	0%
3	It's okay, but would be better if...	1	25%
4	I like it but would be better if...	0	0%
5	I like it a lot because...	3	75%

Comments:

Clean, simple, easy to find and use.
Same comment as first round
Easy to use, placed where expected on page
intuitive

Question 4: How do you feel about the Course Map navigation (available from the bottom bar)?

1	I dislike it a lot and suggest the following changes...	0	0%
2	I dislike it and suggest the following changes...	0	0%
3	It's okay, but would be better if...	1	25%
4	I like it but would be better if...	3	75%
5	I like it a lot because...	0	0%

Comments:

NA...I didn't notice it when I was in the course.
No Change
Nice layout, like being able to view all sub-topics. Will the user be able to access specific sub-topics, or only main topics? Ken Response: Based on screen real estate, I need to keep this at the main topic level, which is more likely how someone would use it to access a specific topic (i.e., they wouldn't want to access the 3rd page of a build).
suggest making the links turn blue and/or underline when mouse over Ken Response: This would be easy to do by modifying the style, however the links do change state, and nobody else seemed to have an issue with this.

Question 5: How do you feel in general about the videos?

1	I dislike them a lot and suggest the following changes...	0	0%
2	I dislike them and suggest the following changes...	0	0%
3	There're okay, but would be better if...	0	0%
4	I like them but would be better if...	0	0%
5	I like them a lot because...	4	100%

Comments:

watching the pieces move around the screen and listening was much more interesting than reading the same info on a static screen.
I enjoyed them. The first video covered the basics in a fairly easy to follow format. The second one bothered me...too much detail, too much information, too much everything. Where the hook worked for me was the third one; nice ahah moment...! Ken Response: This is an outstanding observation!
Felt like being in the room with the trainer; nice piece; good tone / voice. Volume was quiet - on the actual video, I turned it all the way up and then had to turn my speaker to a 70 to hear it okay... not sure it that's an issue with my computer or not.
pleasant voice, pacing seems right, really like the phantom arm placing the symbols and drawing the arrows

Question 6: How do you feel about the job aid?

1	I dislike it a lot and suggest the following changes...	0	0%
2	I dislike it and suggest the following changes...	0	0%
3	It's okay, but would be better if...	1	25%
4	I like it but would be better if...	1	25%
5	I like it a lot because...	2	50%

Comments:

you could search for a particular term rather than scroll through the aid (if this is intended to be an electronic job aid). Ken Response: Interesting thought, but I'm not sure how to accomplish this.
Honestly, the document is boring...but it does exactly what it's supposed to do. Ken Response: Agreed… I may consider a more aesthetic production.
Simple, concise.
great tool. Quick reference. May I print it out and use it? Ken Response: Yes – though the standard browser functionality – I could add those instructions to the reference page or job aid itself.

Question 7: The objective of the lesson you reviewed is: "Given a job aid that labels and describes commonly used flowcharting symbols and labels, match symbols and their labels." Do you feel the lesson achieved this objective?

1	Not at all and I suggest the following changes...	0	0%
2	Not really and I suggest the following changes...	0	0%
3	It's okay but would be better if...	0	0%
4	Yes but would be better if...	0	0%
5	Absolutely because...	4	100%

Comments:

I was able to correctly identify the symbols to their labels in the question section.
Given the limited amount of information in the courseware, the objectives could be considered met.
You provided the job aid on screen with each of the questions; job aid clear and easy to use to assist with answering if needed.
great job aid

Question 8: Did the three multiple choice questions (identify the highlighted symbol) demonstrate mastery of the objective ("Given a job aid that labels and describes commonly used flowcharting symbols and labels, match symbols and their labels")?

1	Not at all and I suggest the following changes...	0	0%
2	Not really and I suggest the following changes...	0	0%
3	It's okay but would be better if...	0	0%
4	Yes but would be better if...	0	0%
5	Absolutely because...	4	100%

Comments:

the question required the learner to view the highlighted symbol and match it to the symbol name in the multiple choice options.
I would have enjoyed creating a flowchart using the symbols vs. answering questions to demonstrate mastery. Given the limited amount of information in the courseware, the objectives could be considered met. Ken Response: This is a great idea, and will be used to test a different objective (build a flowchart).
You provided the job aid on screen with each of the questions; job aid clear and easy to use to assist with answering if needed.
umm.... nice.

Question 9: Do you have any additional feedback on the Functional Prototype (accuracy of the content, correct knowledge level, helpful content, etc.)?

Comments:

In the question section, I would move the job aid button border down a few pixels from the line above it. Not a huge deal though.
I enjoyed the videos content imbedded into the lessons; it added depth and the examples were interesting. Overall, I liked it.
Slide three of the lesson - job aid displayed in what appeared to be an awkward location. Ken Response: Yes… based on the Design Prototype feedback, the reviewers couldn't find the job aid… I intentionally put it in proximity of the prompt text, which meant laying it over the graphic. Slide 9 - you recommend giving a copy of the job aid to someone that needs help -- IF the resources link isn't pointed out earlier in the course, maybe provide a hint / tip of where to get the job aid here? Ken Response: Good point – job aid should be added a master set of job aids on the teams' resource pages.
(no answer)

Functional Prototype Feedback Summary

Reviewer response	Overall, reviewer feedback was positive. The adjustments incorporated based on the initial prototype review were well received and worked. The objective was met and the evaluation strategy passed its expert validity review.
Additional changes	All in all, the current interface, tone, and instructional strategies are on target and can be followed to create the remaining courseware. If this product were going live in the environment, the job aid may get one more overhaul and would be posted into the team's resource page for on-the-job access. If this product were going to be "sold," a higher quality video camera and studio would be needed, as the quality isn't quite professional grade (even shooting with good lighting and using the HD mode on the video camera).

Appendix C: Rubric and EdWeb Reviews

EdWeb Review 1: Flowcharting Procedures

EdWeb Rubric

Name of Developer	Ken Thomas
Name of Peer Reviewer (if this is a Peer Review document)	(Self)
URL of your EdWeb	http://www.rockymountainalchemy.com/cudenver/IT5670/FlowchartingEdWeb/CourseLaunch.html
Authoring tool you used	Dreamweaver

Instructions for Peer Review: For the Peer Review assignment, you will fill-in this rubric as you assess the EdWeb of a colleague in this class.

For the Peer Review, some of the variables below may be difficult to assess. That is, some features of the EdWeb may not yet be fully developed. It's okay to skip variables that do not apply or are impossible for you, the Peer Reviewer, to answer. As the Peer Reviewer, use the "Comments and Justifications from students" column to add your ideas, questions, and/or suggestions. Patrick and Jackie will use the last column, to provide our feedback to both the Peer Reviewer and the person who developed the EdWeb.

For the Peer Review, this is the process:

1. The person who developed the EdWeb fills in the top of the EdWeb Rubric with your name, the URL of your Functional Prototype, the name of the authoring tool you used and whether you used a fixed or variable display. Please add the name of the peer reviewer. You can also fill in any Comments cell where you want to explain something or justify your design for your peer reviewer.
2. Send the EdWeb Rubric to your peer reviewer.
3. The peer reviewer fills in as many rows of the rubric as possible and then discusses the "completed" rubric with the person who developed the EdWeb.
4. The person who developed the EdWeb then answers the two reflection questions at the end of the rubric and posts the rubric to the Completed Assignments>Peer Review section of the course shell.

EdWeb Rubric

Instructions for EdWeb Review: This is the rubric we will use to evaluate your EdWeb.

For the EdWeb Review, this is the process: The person who developed the EdWeb . . .

1. Fills in the top of the EdWeb Rubric with your name, the URL of your Functional Prototype, the name of the authoring tool you used and whether you used a fixed or variable display.
2. Fills out this rubric, checking "yes" or "no" as appropriate for each variable.
3. Fills in the "Comments and Justifications from students" column. You only need to fill in the cells for those variables where you think you might lose points or where you checked "no." See the last bullet below describing when we will deduct 5 points.
4. Posts the EdWeb Rubric to the Completed Assignments>EdWebs section of the course shell.

We will deduct points according to this heuristic:

- 1 point for each typo, misspelling, or grammatical error in your EdWeb.
- 2 points for each violation of CARP in your EdWeb. If there is a consistent and similar violation of CARP, e.g., there is too much white space between headings and the associated text, then we will deduct a total of 10 points. That 10 point reduction will cover all instances of the problem.
- 3 points for incorrect content or content that contradicts itself in different parts of the instruction in your EdWeb.
- 5 points for each check mark in the "No" column below unless you provide a valid justification in the "Comments and Justifications from students" column. That is, you will fill in this rubric and submit it with your EdWeb. If you select the No column for any of the criteria below, please be sure to add a justification in the Comments/Justification column. Example: Your EdWeb has a large white background because that is what the organization, for whom you are developing this site, requires.

EdWeb Rubric

Evaluation Criteria	Yes	No Important: See Instructions (above) for how to use this column	Comments and Justifications from students	Comments from faculty, i.e., Patrick and Jackie
Goals • Is the goal of the EdWeb clearly stated? This may be a section entitled "Questions this lesson will help you answer" or a goal statement in the introduction.	✓		Intro/Course Objectives (the TLOs are listed in Gronlund format)	
Advance Organizer • Is there an advance organizer? • Is the advance organizer used at each transition in the instruction, i.e., at the beginning and/or end of each objective/section? • Is the advance organizer used as a summary at the end of the instruction?	✓		The course menu itself is an advanced organizer, and is perpetual	
Motivation • Is there an "attention grabber" or other motivational technique at the beginning of the EdWeb to engage learners and increase their interest in this lesson? This may be a story, a visual, an animation etc. at the beginning of the EdWeb.	✓			

EdWeb Rubric

• Is there an "Interesting Introduction," at the beginning of each objective/section?	✓			
• Is there information on how long it should take the learner to complete the course/module?		✓	In its current "prototype" state, this info is not available. This information would be added when the courseware is complete and such estimates are available.	
• Is there information on where to get support or help? Perhaps this is the Contact information.	✓		Contact Us	
Horton Absorb, Do, Connect activities • Are at least 50% of the activities for each objective Do or Connect activities? (Horton pg. 106)	✓			
• For objectives that require a job aid, is that job aid described and exemplified in an Absorb activity?	✓			
• For objectives that require a job aid, do learners practice using the job aid (Connect activity)?	✓			
Job Aids • Is CARP applied consistently to the job aid(s)?	✓			
• Can students print the job aid?	✓			

EdWeb Rubric

• Is the job aid a PDF?		✓	It would be easy to convert into a pdf. Currently it is an HTML page that supports standard printing.	
Interactivity (for self-paced, eLearning) • Are learners engaged in some kind of interactivity every 5 to 6 screens, e.g., a Do or Connect activity?	✓			
Navigation • Is the navigation consistent throughout the site? For example, are the forward and back buttons always in the same location	✓			
• Does the navigation allow the learner to easily know where they are, where they can go, and where they have been (using page titles, visual clues, breadcrumbs, or other identifiers) (Horton, p. 563)?	✓			
• Are menus no more than 3 levels deep and contain no more than 7 choices (Horton, p. 542)? Avoid dump truck menus (Horton, p. 544)?	✓			
• Do all menus use the same style (Horton, p. 545)?	✓			
• Is all underlined text a link? If you want to emphasize a word or phrase, use something other than underlining.	✓			

EdWeb Rubric

• Are visited links obvious?		✓	Links are not used extensively – more often, buttons are used instead.	
• If the EdWeb contains external links, do they open in new windows or new tabs or is it clear that following such links will take the learner away from the site (Horton, p. 560)?			No external links are used.	
• Is the function of each link clearly described (Horton, p. 558)?	✓			
• Are all links placed at the end of sentences (Horton, p. 559)?	✓			
• Are all links working properly?	✓		Any non-working link or button in the prototype takes you to a "placeholder" or "function not available in prototype" page.	
Organization/Structure • Is the instruction organized into small "chunks," i.e., each page deals with one idea? (see Visual Display>Vertical scrolling below)	✓			
• Is the organization of the site clear? For example, does the site use headings, subheadings, and/or color(s) to clearly identify the organization of the site?	✓			

EdWeb Rubric

• Does each page have a heading?	✓			
Credibility • Do the footers show copyright or Creative Commons information, revision date, contact links etc.?	✓			
• Is the institutional affiliation, if any, understandable?			n/a	
Consistency/Gestalt • Is there a consistent theme and is there a consistent look and feel throughout the site (headings, text, font, styles, and white space)? Example: If the site is about the artist Claude Monet, all elements of the site should reflect, i.e., be consistent with, the paintings he created. Accordingly, a harsh computer font would be inappropriate.	✓			
Contrast • Is Contrast used effectively? "Contrast is created when two elements are different. If the two elements are sort of different, but not really, then you don't have contrast, you have conflict. That's the key…if two items are not exactly the same, then make them different. Really different" (Williams, p. 63).	✓			

EdWeb Rubric

Alignment • Is Alignment used effectively? "…nothing should be placed on the page arbitrarily. Every item should have a visual connection with something else on the page" (Williams, p. 31).	✓			
Repetition • Is Repetition used effectively? "The principle of repetition states that you repeat various aspects of the design throughout the entire piece. . . Repetition can be thought of as 'consistency.' . . . But repetition goes beyond just being naturally consistent – it is a conscious effort to unify all parts of a design (Williams, p. 49).	✓			
Proximity • Is Proximity used effectively? ". . .group related items together, move them physically close to each other so the related items are seen as one cohesive group rather than a bunch of unrelated bits" (Williams, p. 15).	✓			
• Is there enough open space on the page? Open space or "white space" is an important part of Proximity. Use open space to keep things that do not go together as far apart as possible.	✓			

EdWeb Rubric

Graphics • Is Dual Coding used throughout the EdWeb? o "Providing relevant graphics to text is a proven method of fostering deeper cognitive processing in learners" (Clark & Mayer, 2003, p. 55) o The picture superiority effect is evidence-based, i.e., numerous research studies have shown that students remember images more frequently and more easily than text.	✓			
Legibility • Are all lines of text no more than 40 – 60 characters? (See Williams, p. 120; Horton, p. 516)	✓			
• Is the background color easy on the eyes? Has glare been eliminated as much as possible? Generally, large white backgrounds are the hardest on our eyes because the light shining through the PC monitor is like looking into a flood light.	✓		Use of white background justified in EdWeb paper, and is corporate standard in target deployment audience.	
Color (See Color Scheme references below) • Do colors used for text and background provide enough contrast to be read easily? (Horton, p. 517)	✓			
• Is the color scheme used consistently?	✓			

EdWeb Rubric

Typography (Williams, pg. 123-174) • Are the fonts readable, i.e., crisp, clear, and large enough? (Horton, p. 516)	✓			
• If there is more than one typeface, are the different typefaces used consistently? (This is a type of Repetition.)	✓			
• Is contrast (in size, color, type) in fonts used effectively to show hierarchy, i.e., is it easy to differentiate title, heading 1, heading 2, and body text? (Williams, p. 123)	✓			
Visual Display • Do the pages display correctly and without horizontal scrolling? (Horton, p. 507)	✓			
• If there are any long pages that require vertical scrolling, could those be broken into two or more screens?	✓			
Other				
• Are all pages free of typos, grammatical errors, and passive voice.	✓			
•				
•				

For the Peer Review of the Functional Prototype, the person whose EdWeb is evaluated in this rubric should answer the following reflection questions.

What was the best thing about this Peer Review?

What surprised you about this Peer Review?

References

- R. Williams text book
- Horton: chapter 10 Visual Display
- Thorell, L.G., Smith, W.J. (1990). Using Computer Color Effectively. Englewood Cliffs, NJ: Prentice Hall & Hewlett Packard
- Color Scheme sites:
    1. Color Matters: Symbolism & Emotion: http://www.colormatters.com/brain.html
    2. The Meaning of Colors: http://www.sibagraphics.com/colour.php
    3. Tiger Color: Color Wheels: http://www.tigercolor.com/color-lab/color-theory/color-theory-intro.htm
    4. Web Safe Color Wheel: http://www.malanenewman.com/browser_safe_color_wheel.html
- Figure/Ground sites:
    1. 2D Design Notes: Figure Ground: http://daphne.palomar.edu/design/fandg.html
    2. Edward Tufte's 1+1=3: http://www.jensondesign.com/1+1=3.pdf
    3. Optical Illusions: http://en.wikipedia.org/wiki/Visual_illusion#Object_consistencies
    4. Wikipedia: http://en.wikipedia.org/wiki/Figure-ground_(perception)
- Dual Coding:
    1. http://en.wikipedia.org/wiki/Dual-coding_theory
    2. Clark RC, Mayer RE. e-Learning and the Science of Instruction. San Francisco, CA: Jossey-Bass/Pfeiffer, 2003.
- Picture Superiority effect: http://www.presentationzen.com/presentationzen/2007/04/the_picture_sup.html

EdWeb Review 2: Access Essentials (Online Security)

EdWeb Rubric

Name of Developer	Kelly Vokacek
Name of Peer Reviewer (if this is a Peer Review document)	Ken Thomas
URL of your EdWeb	http://ouray.ucdenver.edu/~kvokacek/edweb/AccessEssentials.htm
Authoring tool you used	Captivate

Instructions for Peer Review: For the Peer Review assignment, you will fill-in this rubric as you assess the EdWeb of a colleague in this class.

For the Peer Review, some of the variables below may be difficult to assess. That is, some features of the EdWeb may not yet be fully developed. It's okay to skip variables that do not apply or are impossible for you, the Peer Reviewer, to answer. As the Peer Reviewer, use the "Comments and Justifications from students" column to add your ideas, questions, and/or suggestions. Patrick and Jackie will use the last column, to provide our feedback to both the Peer Reviewer and the person who developed the EdWeb.

For the Peer Review, this is the process:

5. The person who developed the EdWeb fills in the top of the EdWeb Rubric with your name, the URL of your Functional Prototype, the name of the authoring tool you used and whether you used a fixed or variable display. Please add the name of the peer reviewer. You can also fill in any Comments cell where you want to explain something or justify your design for your peer reviewer.
6. Send the EdWeb Rubric to your peer reviewer.
7. The peer reviewer fills in as many rows of the rubric as possible and then discusses the "completed" rubric with the person who developed the EdWeb.
8. The person who developed the EdWeb then answers the two reflection questions at the end of the rubric and posts the rubric to the Completed Assignments>Peer Review section of the course shell.

EdWeb Rubric

Instructions for EdWeb Review: This is the rubric we will use to evaluate your EdWeb.

For the EdWeb Review, this is the process: The person who developed the EdWeb . . .

5. Fills in the top of the EdWeb Rubric with your name, the URL of your Functional Prototype, the name of the authoring tool you used and whether you used a fixed or variable display.
6. Fills out this rubric, checking "yes" or "no" as appropriate for each variable.
7. Fills in the "Comments and Justifications from students" column. You only need to fill in the cells for those variables where you think you might lose points or where you checked "no." See the last bullet below describing when we will deduct 5 points.
8. Posts the EdWeb Rubric to the Completed Assignments>EdWebs section of the course shell.

We will deduct points according to this heuristic:

- 1 point for each typo, misspelling, or grammatical error in your EdWeb.
- 2 points for each violation of CARP in your EdWeb. If there is a consistent and similar violation of CARP, e.g., there is too much white space between headings and the associated text, then we will deduct a total of 10 points. That 10 point reduction will cover all instances of the problem.
- 3 points for incorrect content or content that contradicts itself in different parts of the instruction in your EdWeb.
- 5 points for each check mark in the "No" column below unless you provide a valid justification in the "Comments and Justifications from students" column. That is, you will fill in this rubric and submit it with your EdWeb. If you select the No column for any of the criteria below, please be sure to add a justification in the Comments/Justification column. Example: Your EdWeb has a large white background because that is what the organization, for whom you are developing this site, requires.

EdWeb Rubric

Evaluation Criteria	Yes	No Important: See Instructions (above) for how to use this column	Comments and Justifications from students	Comments from faculty, i.e., Patrick and Jackie
Goals • Is the goal of the EdWeb clearly stated? This may be a section entitled "Questions this lesson will help you answer" or a goal statement in the introduction.	✓		I liked the way objectives were tied to rationale	
Advance Organizer • Is there an advance organizer? • Is the advance organizer used at each transition in the instruction, i.e., at the beginning and/or end of each objective/section? • Is the advance organizer used as a summary at the end of the instruction?	✓		The lock – nice!	
Motivation • Is there an "attention grabber" or other motivational technique at the beginning of the EdWeb to engage learners and increase their interest in this lesson? This may be a story, a visual, an animation etc. at the beginning of the EdWeb.	✓		Stories of "bad things" happening	

EdWeb Rubric

• Is there an "Interesting Introduction," at the beginning of each objective/section?	✓		Personal stories	
• Is there information on how long it should take the learner to complete the course/module?	✓		Yes – in meet the instructor video	
• Is there information on where to get support or help? Perhaps this is the Contact information.	✓			
Horton Absorb, Do, Connect activities • Are at least 50% of the activities for each objective Do or Connect activities? (Horton pg. 106)	✓			
• For objectives that require a job aid, is that job aid described and exemplified in an Absorb activity?	✓			
• For objectives that require a job aid, do learners practice using the job aid (Connect activity)?	✓			
Job Aids • Is CARP applied consistently to the job aid(s)?	✓			
• Can students print the job aid?	✓			
• Is the job aid a PDF?	✓			
Interactivity (for self-paced, eLearning) • Are learners engaged in some kind of interactivity every 5 to 6 screens, e.g., a Do or Connect activity?	✓			

EdWeb Rubric

Navigation • Is the navigation consistent throughout the site? For example, are the forward and back buttons always in the same location	✓			
• Does the navigation allow the learner to easily know where they are, where they can go, and where they have been (using page titles, visual clues, breadcrumbs, or other identifiers) (Horton, p. 563)?	✓			
• Are menus no more than 3 levels deep and contain no more than 7 choices (Horton, p. 542)? Avoid dump truck menus (Horton, p. 544)?	✓			
• Do all menus use the same style (Horton, p. 545)?	✓			
• Is all underlined text a link? If you want to emphasize a word or phrase, use something other than underlining.	✓			
• Are visited links obvious?	✓			
• If the EdWeb contains external links, do they open in new windows or new tabs or is it clear that following such links will take the learner away from the site (Horton, p. 560)?				
• Is the function of each link clearly described (Horton, p. 558)?	✓			
• Are all links placed at the end of sentences (Horton, p. 559)?	✓			

EdWeb Rubric

• Are all links working properly?		✓	Some of the Next / Backs aren't working properly (in the Desk Audits – Back kept taking me Next)	
Organization/Structure • Is the instruction organized into small "chunks," i.e., each page deals with one idea? (see Visual Display>Vertical scrolling below)	✓			
• Is the organization of the site clear? For example, does the site use headings, subheadings, and/or color(s) to clearly identify the organization of the site?	✓			
• Does each page have a heading?	✓			
Credibility • Do the footers show copyright or Creative Commons information, revision date, contact links etc.?	✓			
• Is the institutional affiliation, if any, understandable?	✓			

EdWeb Rubric

Consistency/Gestalt • Is there a consistent theme and is there a consistent look and feel throughout the site (headings, text, font, styles, and white space)? Example: If the site is about the artist Claude Monet, all elements of the site should reflect, i.e., be consistent with, the paintings he created. Accordingly, a harsh computer font would be inappropriate.	✓			
Contrast • Is Contrast used effectively? "Contrast is created when two elements are different. If the two elements are sort of different, but not really, then you don't have contrast, you have conflict. That's the key…if two items are not exactly the same, then make them different. Really different" (Williams, p. 63).	✓			
Alignment • Is Alignment used effectively? "…nothing should be placed on the page arbitrarily. Every item should have a visual connection with something else on the page" (Williams, p. 31).	✓			

EdWeb Rubric

Repetition • Is Repetition used effectively? "The principle of repetition states that you repeat various aspects of the design throughout the entire piece. . . Repetition can be thought of as 'consistency.' . . . But repetition goes beyond just being naturally consistent – it is a conscious effort to unify all parts of a design (Williams, p. 49).	✓			
Proximity • Is Proximity used effectively? ". . .group related items together, move them physically close to each other so the related items are seen as one cohesive group rather than a bunch of unrelated bits" (Williams, p. 15).	✓			
• Is there enough open space on the page? Open space or "white space" is an important part of Proximity. Use open space to keep things that do not go together as far apart as possible.	✓			

EdWeb Rubric

Graphics • Is Dual Coding used throughout the EdWeb? o "Providing relevant graphics to text is a proven method of fostering deeper cognitive processing in learners" (Clark & Mayer, 2003, p. 55) o The picture superiority effect is evidence-based, i.e., numerous research studies have shown that students remember images more frequently and more easily than text.	✓			
Legibility • Are all lines of text no more than 40 – 60 characters? (See Williams, p. 120; Horton, p. 516)	✓			
• Is the background color easy on the eyes? Has glare been eliminated as much as possible? Generally, large white backgrounds are the hardest on our eyes because the light shining through the PC monitor is like looking into a flood light.	✓			
Color (See Color Scheme references below) • Do colors used for text and background provide enough contrast to be read easily? (Horton, p. 517)	✓			
• Is the color scheme used consistently?	✓			

EdWeb Rubric

Typography (Williams, pg. 123-174) • Are the fonts readable, i.e., crisp, clear, and large enough? (Horton, p. 516)	✓			
• If there is more than one typeface, are the different typefaces used consistently? (This is a type of Repetition.)	✓			
• Is contrast (in size, color, type) in fonts used effectively to show hierarchy, i.e., is it easy to differentiate title, heading 1, heading 2, and body text? (Williams, p. 123)	✓			
Visual Display • Do the pages display correctly and without horizontal scrolling? (Horton, p. 507)	✓			
• If there are any long pages that require vertical scrolling, could those be broken into two or more screens?	✓			
Other				
• Are all pages free of typos, grammatical errors, and passive voice.	✓			
•				
•				

Overall Response:

I'm USUALLY not a fan of courseware put together in Captivate, so all the more reason this course stands out as "well done" – the designer avoided the traps of "easy creation" that leads to many Captivate courses looking less like "CARP" and more like "CRAP." I thought the course was well put together. I enjoyed the use of the "xtranormal" videos – one recommendation is to find how to embed them into the course – especially when the characters are pointing to navigation features in the course interface (which aren't present in YouTube). Great course!

For the Peer Review of the Functional Prototype, the person whose EdWeb is evaluated in this rubric should answer the following reflection questions.

What was the best thing about this Peer Review?

What surprised you about this Peer Review?

References

- R. Williams text book
- Horton: chapter 10 Visual Display
- Thorell, L.G., Smith, W.J. (1990). Using Computer Color Effectively. Englewood Cliffs, NJ: Prentice Hall & Hewlett Packard
- Color Scheme sites:
    1. Color Matters: Symbolism & Emotion: http://www.colormatters.com/brain.html
    2. The Meaning of Colors: http://www.sibagraphics.com/colour.php
    3. Tiger Color: Color Wheels: http://www.tigercolor.com/color-lab/color-theory/color-theory-intro.htm
    4. Web Safe Color Wheel: http://www.malanenewman.com/browser_safe_color_wheel.html
- Figure/Ground sites:
    1. 2D Design Notes: Figure Ground: http://daphne.palomar.edu/design/fandg.html
    2. Edward Tufte's 1+1=3: http://www.jensondesign.com/1+1=3.pdf
    3. Optical Illusions: http://en.wikipedia.org/wiki/Visual_illusion#Object_consistencies
    4. Wikipedia: http://en.wikipedia.org/wiki/Figure-ground_(perception)
- Dual Coding:
    1. http://en.wikipedia.org/wiki/Dual-coding_theory
    2. Clark RC, Mayer RE. e-Learning and the Science of Instruction. San Francisco, CA: Jossey-Bass/Pfeiffer, 2003.
- Picture Superiority effect: http://www.presentationzen.com/presentationzen/2007/04/the_picture_sup.html

EdWeb Review 3: Dramatic Elements – Passion & Theme

EdWeb Rubric

Name of Developer	Aimee Willis
Name of Peer Reviewer (if this is a Peer Review document)	Ken Thomas
URL of your EdWeb	http://www.wix.com/aimeecwillis/edweb
Authoring tool you used	WIX

Instructions for Peer Review: For the Peer Review assignment, you will fill-in this rubric as you assess the EdWeb of a colleague in this class.

For the Peer Review, some of the variables below may be difficult to assess. That is, some features of the EdWeb may not yet be fully developed. It's okay to skip variables that do not apply or are impossible for you, the Peer Reviewer, to answer. As the Peer Reviewer, use the "Comments and Justifications from students" column to add your ideas, questions, and/or suggestions. Patrick and Jackie will use the last column, to provide our feedback to both the Peer Reviewer and the person who developed the EdWeb.

For the Peer Review, this is the process:

9. The person who developed the EdWeb fills in the top of the EdWeb Rubric with your name, the URL of your Functional Prototype, the name of the authoring tool you used and whether you used a fixed or variable display. Please add the name of the peer reviewer. You can also fill in any Comments cell where you want to explain something or justify your design for your peer reviewer.
10. Send the EdWeb Rubric to your peer reviewer.
11. The peer reviewer fills in as many rows of the rubric as possible and then discusses the "completed" rubric with the person who developed the EdWeb.
12. The person who developed the EdWeb then answers the two reflection questions at the end of the rubric and posts the rubric to the Completed Assignments>Peer Review section of the course shell.

EdWeb Rubric

Instructions for EdWeb Review: This is the rubric we will use to evaluate your EdWeb.

For the EdWeb Review, this is the process: The person who developed the EdWeb . . .

9. Fills in the top of the EdWeb Rubric with your name, the URL of your Functional Prototype, the name of the authoring tool you used and whether you used a fixed or variable display.
10. Fills out this rubric, checking "yes" or "no" as appropriate for each variable.
11. Fills in the "Comments and Justifications from students" column. You only need to fill in the cells for those variables where you think you might lose points or where you checked "no." See the last bullet below describing when we will deduct 5 points.
12. Posts the EdWeb Rubric to the Completed Assignments>EdWebs section of the course shell.

We will deduct points according to this heuristic:

- 1 point for each typo, misspelling, or grammatical error in your EdWeb.
- 2 points for each violation of CARP in your EdWeb. If there is a consistent and similar violation of CARP, e.g., there is too much white space between headings and the associated text, then we will deduct a total of 10 points. That 10 point reduction will cover all instances of the problem.
- 3 points for incorrect content or content that contradicts itself in different parts of the instruction in your EdWeb.
- 5 points for each check mark in the "No" column below unless you provide a valid justification in the "Comments and Justifications from students" column. That is, you will fill in this rubric and submit it with your EdWeb. If you select the No column for any of the criteria below, please be sure to add a justification in the Comments/Justification column. Example: Your EdWeb has a large white background because that is what the organization, for whom you are developing this site, requires.

EdWeb Rubric

Evaluation Criteria	Yes	No Important: See Instructions (above) for how to use this column	Comments and Justifications from students	Comments from faculty, i.e., Patrick and Jackie
Goals • Is the goal of the EdWeb clearly stated? This may be a section entitled "Questions this lesson will help you answer" or a goal statement in the introduction.	✓			
Advance Organizer • Is there an advance organizer? • Is the advance organizer used at each transition in the instruction, i.e., at the beginning and/or end of each objective/section? • Is the advance organizer used as a summary at the end of the instruction?		✓	I couldn't find one…	
Motivation • Is there an "attention grabber" or other motivational technique at the beginning of the EdWeb to engage learners and increase their interest in this lesson? This may be a story, a visual, an animation etc. at the beginning of the EdWeb.	✓		Mark Twain's intro and continued visitations as host.	

EdWeb Rubric

• Is there an "Interesting Introduction," at the beginning of each objective/section?	✓			
• Is there information on how long it should take the learner to complete the course/module?	✓			
• Is there information on where to get support or help? Perhaps this is the Contact information.	✓			
Horton Absorb, Do, Connect activities • Are at least 50% of the activities for each objective Do or Connect activities? (Horton pg. 106)	✓		The stories take more time listening, but I'm only counting them as one activity	
• For objectives that require a job aid, is that job aid described and exemplified in an Absorb activity?	✓		Job aid should be split into functions	
• For objectives that require a job aid, do learners practice using the job aid (Connect activity)?	✓			
Job Aids • Is CARP applied consistently to the job aid(s)?	✓			
• Can students print the job aid?	✓			
• Is the job aid a PDF?	✓			
Interactivity (for self-paced, eLearning) • Are learners engaged in some kind of interactivity every 5 to 6 screens, e.g., a Do or Connect activity?	✓			

EdWeb Rubric

Navigation • Is the navigation consistent throughout the site? For example, are the forward and back buttons always in the same location	✓			
• Does the navigation allow the learner to easily know where they are, where they can go, and where they have been (using page titles, visual clues, breadcrumbs, or other identifiers) (Horton, p. 563)?	✓			
• Are menus no more than 3 levels deep and contain no more than 7 choices (Horton, p. 542)? Avoid dump truck menus (Horton, p. 544)?	✓			
• Do all menus use the same style (Horton, p. 545)?	✓			
• Is all underlined text a link? If you want to emphasize a word or phrase, use something other than underlining.	✓			
• Are visited links obvious?	✓			
• If the EdWeb contains external links, do they open in new windows or new tabs or is it clear that following such links will take the learner away from the site (Horton, p. 560)?				
• Is the function of each link clearly described (Horton, p. 558)?	✓			
• Are all links placed at the end of sentences (Horton, p. 559)?	✓			

EdWeb Rubric

• Are all links working properly?	✓			
Organization/Structure • Is the instruction organized into small "chunks," i.e., each page deals with one idea? (see Visual Display>Vertical scrolling below)	✓			
• Is the organization of the site clear? For example, does the site use headings, subheadings, and/or color(s) to clearly identify the organization of the site?	✓			
• Does each page have a heading?	✓			
Credibility • Do the footers show copyright or Creative Commons information, revision date, contact links etc.?	✓			
• Is the institutional affiliation, if any, understandable?				
Consistency/Gestalt • Is there a consistent theme and is there a consistent look and feel throughout the site (headings, text, font, styles, and white space)? Example: If the site is about the artist Claude Monet, all elements of the site should reflect, i.e., be consistent with, the paintings he created. Accordingly, a harsh computer font would be inappropriate.	✓		Great selection of graphics (e.g., the Corpse Bride) – I would question whether these are copyright violations before publishing	

EdWeb Rubric

Contrast • Is Contrast used effectively? "Contrast is created when two elements are different. If the two elements are sort of different, but not really, then you don't have contrast, you have conflict. That's the key…if two items are not exactly the same, then make them different. Really different" (Williams, p. 63).	✓			
Alignment • Is Alignment used effectively? "…nothing should be placed on the page arbitrarily. Every item should have a visual connection with something else on the page" (Williams, p. 31).	✓			
Repetition • Is Repetition used effectively? "The principle of repetition states that you repeat various aspects of the design throughout the entire piece. . . Repetition can be thought of as 'consistency.' . . . But repetition goes beyond just being naturally consistent – it is a conscious effort to unify all parts of a design (Williams, p. 49).	✓			

EdWeb Rubric

Proximity • Is Proximity used effectively? ". . .group related items together, move them physically close to each other so the related items are seen as one cohesive group rather than a bunch of unrelated bits" (Williams, p. 15).	✓			
• Is there enough open space on the page? Open space or "white space" is an important part of Proximity. Use open space to keep things that do not go together as far apart as possible.	✓			
Graphics • Is Dual Coding used throughout the EdWeb? o "Providing relevant graphics to text is a proven method of fostering deeper cognitive processing in learners" (Clark & Mayer, 2003, p. 55) o The picture superiority effect is evidence-based, i.e., numerous research studies have shown that students remember images more frequently and more easily than text.	✓			
Legibility • Are all lines of text no more than 40 – 60 characters? (See Williams, p. 120; Horton, p. 516)	✓			

EdWeb Rubric

• Is the background color easy on the eyes? Has glare been eliminated as much as possible? Generally, large white backgrounds are the hardest on our eyes because the light shining through the PC monitor is like looking into a flood light.	✓			
Color (See Color Scheme references below) • Do colors used for text and background provide enough contrast to be read easily? (Horton, p. 517)	✓			
• Is the color scheme used consistently?	✓			
Typography (Williams, pg. 123-174) • Are the fonts readable, i.e., crisp, clear, and large enough? (Horton, p. 516)	✓			
• If there is more than one typeface, are the different typefaces used consistently? (This is a type of Repetition.)	✓			
• Is contrast (in size, color, type) in fonts used effectively to show hierarchy, i.e., is it easy to differentiate title, heading 1, heading 2, and body text? (Williams, p. 123)	✓			
Visual Display • Do the pages display correctly and without horizontal scrolling? (Horton, p. 507)	✓			

EdWeb Rubric

• If there are any long pages that require vertical scrolling, could those be broken into two or more screens?	✓			
Other				
• Are all pages free of typos, grammatical errors, and passive voice.	✓			
•				
•				

Overall Response:

I thought the overall design is beautiful. I love the images within the Job Aid (again, make sure you have permission to use them, as I'm assuming they are copyrighted – should be obtainable within "fair use" for education). I love the use of the classic typewriter keys across the top – I can't help but feel these conflict with the menu look and feel at the bottom – it would have been interesting to make the menu font courier to look typed on a classic typewriter, and that could have been incorporated more throughout the site. Still, the overall course is well designed and well done (I listened to the entire reading of The Corpse Bride).

For the Peer Review of the Functional Prototype, the person whose EdWeb is evaluated in this rubric should answer the following reflection questions.

What was the best thing about this Peer Review?

What surprised you about this Peer Review?

References

- R. Williams text book
- Horton: chapter 10 Visual Display
- Thorell, L.G., Smith, W.J. (1990). Using Computer Color Effectively. Englewood Cliffs, NJ: Prentice Hall & Hewlett Packard
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    2. The Meaning of Colors: http://www.sibagraphics.com/colour.php
    3. Tiger Color: Color Wheels: http://www.tigercolor.com/color-lab/color-theory/color-theory-intro.htm
    4. Web Safe Color Wheel: http://www.malanenewman.com/browser_safe_color_wheel.html
- Figure/Ground sites:
    1. 2D Design Notes: Figure Ground: http://daphne.palomar.edu/design/fandg.html
    2. Edward Tufte's 1+1=3: http://www.jensondesign.com/1+1=3.pdf
    3. Optical Illusions: http://en.wikipedia.org/wiki/Visual_illusion#Object_consistencies
    4. Wikipedia: http://en.wikipedia.org/wiki/Figure-ground_(perception)
- Dual Coding:
    1. http://en.wikipedia.org/wiki/Dual-coding_theory
    2. Clark RC, Mayer RE. e-Learning and the Science of Instruction. San Francisco, CA: Jossey-Bass/Pfeiffer, 2003.
- Picture Superiority effect: http://www.presentationzen.com/presentationzen/2007/04/the_picture_sup.html