Digital Library Search Module

Instructional Design
5100: 631 Copley Cohort
University of Akron College of Education
Spring 2010

The Techies
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SMEs
Dr. Liang, Dr. Aby

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Dr. Savery
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Biographies

Tamela Anderson: Tamela Anderson has been working in the special education department at Copley High School for the last ten years. She has served both as a tutor and classroom Intervention Specialist. Tamela teaches English and math to students in grades 9-12. She is in her second semester of the IT program.

Nico Lindsey: At the beginning of this semester, Nico Lindsey was completing his graduate assistantship in the Institute of Teaching and Learning at the University of Akron. At the completion of this class, Nico will have earned his master’s degree. He currently is a substitute for the Nordonia school system.

Nikki Makowski: Nikki has been working in the Business department at Hoover High School in the North Canton School system for two years now. She teaches Accounting, Web Tools, and Computer Applications. This is Nikki’s first semester in the IT program.

SMEs

Dr. Xin Liang- University of Akron Associate professor who teaches the graduate level Techniques of Research course

Dr. Stephen Aby- University of Akron Librarian and Bibliographer who works at Bierce Library

Context

University of Akron graduate level “Techniques of Research” online course

Instructional Problem

Dr. Liang’s students who use the same course materials for online classes and face to face classes found that the online students were not as successful at retrieving full length, properly cited articles for her literature review from the digital databases as the face to face students were who had also experienced her personal demonstration.

Dr. Liang would like some type of online tutorial designed to assist the online students.
Digital Library Resources Project

Analysis Phase

The Learning Situation/Problem:
Master level students in a fully online version of the Techniques of Research course find utilizing library resources challenging. Specifically, students struggle with finding full text digital articles through online databases. The need for our instructional design is to create instructional materials so students can conduct independent literature searches which efficiently and easily locate full text research articles in the Ebsco databases from the University of Akron’s Bierce Library website. The students will need these research articles to complete a research proposal where they will be interpreting, analyzing, and synthesizing their full text articles.

The Learning Goal:
The students will obtain three full text scholarly articles with proper APA citation for the literature review assignment in the fully online version of the Techniques of Research course by the end of the module.

Needs Analysis:
The needs were identified by the professor teaching the course, Dr. Xin Liang. We found a comparative need and a felt need. Dr. Liang found that teaching students how to conduct a literature search for full text digital articles face-to-face is more successful since instructors can demonstrate the specific steps in a computer lab and have students practice with immediate feedback. However, directing students to navigate through the library resources and conduct a literature search for full text articles in an online environment was very different and difficult for the students since they did not have a personalized step-by-step demonstration. (comparative need) Dr. Liang felt that the online students were overwhelmed and approximately 1/3 of them seemed very confused and unable to locate materials for their literature review assignment. Dr. Liang felt that the online students were underperforming and desires for the students’ skill level of conducting literature research to be improved. (felt need)

Some students may have an array of limitations. For instance, students may experience a conceptual resource limitation when their technical skills for using technology may be less than average. Students may experience institutional resource limitations if their server or Internet is slow or if they don’t have access to the Internet. Other students may experience time constraints. Normally, this module lasts approximately 2 ½ hours in a face-to-face course with additional outside work. For the online course, this module takes approximately one week.

Learner Analysis:
Dr. Liang’s learners are graduate students enrolled in the fully online version of the Techniques of Research course which is a foundations course that serves all of the students in all of the master's degree programs in the College of Education. Most students are adult learners. Some are in-service teachers.
Design Phase:

Task Analysis:
We will break the instructional design process down into steps by using a procedural learning style. Since the students are currently enrolled in an online class through the University of Akron, the students will already have been instructed on how to access their Springboard! accounts through Zipline. Students will identify the action in each step and then complete that step before progressing to the next step. Students will know if they have completed the step correctly if their screen looks similar to the demonstration video and they can successfully complete Activity 1.

Learning Theory:
We will be using a combination of the behavioral and cognitive learning theories. We will break the process down into small steps and each step will have feedback. We also provide the students with examples to strengthen conceptual learning. We will focus on the visual and kinesthetic learning styles by using the computer with online videos and library resources.

Learning Objectives:
1. Given a resource list, the students will identify at least two databases with articles pertaining to their content area.
2. The students will build searches in the online database using keywords and modifiers to display approximately 100 articles.
3. The students will apply APA style citation to their full text article with 100% accuracy.

Instructional Strategy and Sequence:
Based on the needs analysis, Dr. Liang’s graduate students need an opportunity to visually watch a demonstration of accessing the Library’s databases and practice locating and citing digital resources.

Pre-Instruction Activity
Initial Presentation: Students are given an overview of the Digital Library Search module.
Generative Strategy: First, the students will identify different online databases. Secondly, the learner will identify search terms.

| Objective 1:  Given a resource list, the students will identify at least two databases with articles pertaining to their content area. |
| Initial Presentation:  The students read the “Instructor Notes #1” and database resource list before using the step-by-step “How To” document while watching the “Selecting a Database” tutorial video. |
| Generative Strategy:  First, the students will identify two databases pertaining to their content area. Secondly, the students will summarize this process. |
**Objective 2:** The students will build searches in the online database using keywords and modifiers to display approximately 100 articles.

**Initial Presentation:** The students use the step-by-step “How To” document while watching the “Searching a Database” tutorial video.

**Generative Strategy:** First, the students will identify keywords and modifiers to display full text articles. Secondly, the students will summarize this process.

**Objective 3:** The students will apply APA citation to their full text article with 100% accuracy.

**Initial Presentation:** The students read the step-by-step “How To” document and watch the “Easily Obtaining Citations” tutorial video.

**Generative Strategy:** First, the students will identify the APA citation in the search result list. Secondly, the students will select APA style citation and apply the citation to their works cited page for Activity 1.

**Development Phase:**

**Media Selection Rationale:**
Students will use materials such as: the instructor notes, a procedural “How To” document, online video tutorials, and the discussion board to learn how to easily conduct a digital library search for full text articles in an online database. We chose these media materials because our learners’ need for technological support that provides a visual demonstration for the learners. We provide a step-by-step detailed instructional document as well as a tutorial with mini-videos where students can watch each isolated step required to complete a literature search. The “How To” document helps students follow each video so that the students can practice what they are learning. The instructional materials that were created capture the expertise of both SMEs, Dr. Stephen Aby and Dr. Liang, and have the potential to benefit many students using digital library resources beyond just those in Dr. Liang’s Techniques of Research course.

**Message Design:**
We began our module with an overview that introduces, explains, and prepares the students for the learning tasks within the module. Our overview explains not only what tasks need to be completed, but also, what order and when the tasks need to be completed. In our overview, we precisely inform the students as to what the learning goal and objectives are for the module.

Additionally, we have saved and organized each instructional document in the order the students should complete the tasks. We used different (but uniform) headings and subheadings, different font sizes and colors, ordered and unordered lists to display an
easy layout structure for the students to follow. We used different typographical signals such as bold face or italics to also indicate important words or phrases.

**Instructional Resources:**
1. Instructor Note #1
2. Pre-test Activity.
3. Research Database Resource List
4. Procedural “How To” Document
5. Instructional Tutorial Videos that are within the “How To” Document
6. Activity 1
7. Feedback Survey

**Assessment Phase:**
Students will show competency of the objectives by completing Activity 1 of the evaluation on the discussion board.

**Activity 1- Surf electronic databases and post to discussion board**

1. Think about one or two research topics that are of interest to you, and skim through the list of databases.
2. Write down two research questions.
3. Locate at least two different databases to conduct your research.
4. Identify 3-4 keywords in each database that you used to locate full text articles.
5. Locate at least 3 different articles pertaining to your topic.
6. Using APA style citation, cite three different articles that you found in your search.
7. Write a paragraph describing your actions and results in a word processor and paste it in the discussion board of Springboard.

**Implementation Phase:**

**Target Audience:**
Our target audience is the online students in the Techniques of Research course who usually are employed professional teachers. Unfortunately, the online version of the course is not offered during this semester, so we were unable to implement our project to our target audience. Then we began searching for a comparable audience which was determined to be five or more adults (preferably educators or grad students.)

Hence, we were able to implement our project, two separate times. The first time eight in-service teachers in addition to the team members evaluated the module. Three of the professional educators are graduate students while two have already earned their master’s degrees. For the second trial, we had thirteen participants. Five of these working teachers are currently graduate students while three others are in-service teachers who have already earned their master’s degree.
Implementation Timeline and Process:

1st Trial = April 14-15, 2010
During the first implementation, team member Nicole collected data for the project in a computer lab at Hoover High School on Thurs. April 15, 2010, from approximately 2:45 p.m. to 3:05 p.m. Each participant had his/her own computer. Nicole had uploaded the Procedural “How To” Document and the feedback survey on each computer prior to the participants’ arrival. A hard copy of the “How To” and the directions were also provided. The participants were directed to use the “How To” Document as a guide while conducting a search in the ERIC (Ebsco) database on the topic of “Reading instruction to special education students.” Secondly, the teachers were to properly cite, in APA style, the article, “Teaching Literacy to Students with Severe Cognitive Disabilities” by Karena Cooper-Duffy, Pamela Szedia and Hyer Glenda into a word processor; again using the “How To” procedural document as an aide. Finally, the participants were to complete the feedback survey. The other three surveys were collected by team members Nico and Tamela from individual co-workers in a similar manner.

2nd Trial = April 16 – 21, 2010
The second implementation generally used the same procedure as the 1st Trial using the updated videos, directions, and handout. The request for voluntary participants was also posted on the discussion board of Nicole and Tamela’s Introduction to Instructional Technology course, our Instructional Design discussion board as well as the IT Portal.

Implementation Process:

Broadly speaking, with a printout of the “How To” instructions, the video, directions, and a computer, the adult educators were asked to watch the video and complete the feedback form.

Data collected from 1st Trial= During this initial implementation, the majority of participants were confused by the directions in the “How To” Document. They were unsure where to go next, or how to locate the databases based solely on the “How To” Document or where to navigate within the databases. The majority of these confused participants did not know to watch the videos as the video tutorials were not hyperlinked within the “How To” Document. Overall, the first implementation was very frustrating for the participants; yet with additional guidance, they all managed to complete the tasks. Average length for completing all tasks was approximately twenty-two minutes.

Data collected from 2nd Trial= For all team members, administering the 2nd Trial went more smoothly. Participants were asked upfront to critique the instructional videos and search process as well as complete the activity. Most participants were able to independently complete all steps with much less instruction. The length of administration shortened to approximately ten minutes instead of twenty minutes. In general, comments were more positive with recommendations for further enhancements.
Recommendations for Changes:

1st Trial= We made several changes to the “How To” Document. First, we edited the layout to include a structured numerical list so students will recognize visually when to go to the next item and what the next item is. Secondly, we used typography to bold the action words in each of the steps. We added bulleted points for further explanation of each step. In a larger font size and in bold, we added headings to the “How To” Document to match the tutorial video headings. We embedded the videos to the left of each step underneath each of the headings so students know to watch the videos and to have easy access to the videos. We also added another question to our feedback survey to include a text response for key words and modifiers. The videos were changed to include the “How To” information on the right-hand side of the screen. One of the missing videos was added. Various word and font changes were made to the video text. Additional steps were created for the APA style citation video.

2nd Trial= Several older participants and one of our SMEs, Dr. Aby, suggested increasing the size of the fonts used in the video or making the videos full screen. So we added directions before the video to show students how to make the video full screen. Secondly, the size of the actual video was increased by 50%. Also, we added some directions for the clicking on the play button to start the video. A couple of formatting issues within the online text were corrected.

Feedback from Dr. Aby: Dr. Aby thought the project was well done. He suggested we let users know that there is a way to get the videos full screen.

Feedback from Dr. Liang: Dr. Liang requested that information from Instructor’s note #2 be added to the video and eliminated from the module. She also asked for Instructor’s note #3 to be eliminated from this module because she will include it in another one. This meant we no longer needed to include our 4th objective or Activity #2 since both of these were related to the topic covered in the Instructor’s note #3.

Evaluation Phase:

Implementation of Evaluation Plan:
Nikki, Nico, and Tamela solicited help from colleagues and peers to view and evaluate the tutorial since no university class of Techniques of Research was available for actual implementation. Each participant provided a feedback sheet in the trial run.

Students in the actual Techniques of Research class would normally complete Activity 1 in order to prove the mastery of data base research skills. What our participants were asked to do was a simplified, more efficient version of Activity 1.

Collection of Formative Evaluation Data:
Though the number of participants was small, each team member collected helpful feedback with high-quality suggestions for functional improvements or general enhancements. Data for improvements were collected from twenty-six people including colleagues, peers, SMEs, and team members.
Assessment and Interpretation of Formative Evaluation Data:
Through the information collected on the feedback form for the initial trial, we were led to modify the feedback form and directions as well as the handouts and videos. There were several unforeseen flaws that emerged. First, some participants wanted to read the “How To” Document to complete Activity 1 and skip watching the videos. Secondly, some older participants needed a larger demonstration screen in order to clearly read the information in the video. Thirdly, most of the participants were unaware that a button existed in YouTube to make the video full screen.

Recommendations for Changes:
The team took all suggestions for enhancements under consideration. After brainstorming several ways of satisfying the needed modifications, the team would decide on the best course of action and make the changes. Future enhancements might include the addition of a voice over for the videos. At this time, our tutorial was modeled after the existing Bierce Library tutorials.
References

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