

Plan for Evaluating the Instructional Technology for the History of Photography Course

EXT 597 - Dr. Stanley Varnhagen
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Client: Image Arts Department, Ryerson University, Toronto, ON

Introduction

A Winter 2002 program review of the Image Arts department at Ryerson University revealed a number of areas in which the program could offer alternatives to face-to-face courses. One such course was the History of Photography, which is a required course for second year photography stream students.

It was decided by the Image Arts advisory committee to convert the content of this course from one 3-hour lecture per week, to a web-based instructional technology product and have it available for rollout Fall 2003. Some on the committee have been researching various types of online delivery and the committee has decided to field test the new TextWeaver discussion software in combination with the Web CT software that the university currently uses.

Ryerson has executed many online teaching programs in their distance education department using Web CT server based program. They currently add about 30 new online courses per year. The proposed course would require the addition of the new TextWeaver software, but it will work as an add-on to the existing Web CT program. This will keep the development of the course internal to the institution, speed up the implementation time, and help to keep costs down.

TextWeaver is based on the open source software Course Reader, developed by Cindy Xin (SFU). Course Reader enables offline organizing of online discussions. TextWeaver builds on the Course Reader software with the added components of keywording and weaving.

This will be the first online course available from the Image Arts Department at Ryerson and the faculty is in support of the new direction the department is taking. It will also be the first course using the new TextWeaver discussion forum software at the University. If successful other non-studio Image Arts courses will be added to the roster. This will allow students who have studio or other industry job placements off campus the flexibility to complete non-studio courses on their own schedule.

In dealing with a new software product and new ways to teach a course there are many changes involved in the process. Academic standards must remain high. As a result, the advisory committee and faculty fully support empirical evaluation of the course. This is

the first cycle, or pilot test, of many in the testing of the new software. Future evaluations will be conducted in classroom settings starting in Fall 2003.

Description of the History of Photography Course Using Instructional Technology

The History of Photography is a required course for second year photography stream students. In the past it was taught in one three-hour lecture per week. The material was delivered via slide projector and lecture. A bit of discussion took place but the delivery of content was the main focus.

The online version of the course will deliver notes, assignments and some readings via the Web CT interface. It will also use a textbook to deliver content. There will be guest lectures three times during the semester from members of the photographic community, i.e. museum director, exhibition curator, gallery owner. Students are required to attend two out of the three lectures, as there will be assignments based on them. They will be held in the mornings and afternoons each time to allow students the chance to attend. The guest lectures will also be available to other photography students.

TextWeaver software will be used as the discussion forum for the course. Students will have questions to discuss and answer based on their readings each week. The instructor will also participate in the discussions and steer them if necessary. All students will be given participation marks based on the time spent on the discussions.

There will be a final paper intended to get the students to weave concepts derived from the TextWeaver discussions. There will also be a final exam.

Students of the Image Arts Photography program are required to have their own computer. The TextWeaver software is available for Macintosh and PC platforms and will reside on the student's computers.

Description of TextWeaver Software

Currently Ryerson University uses Web CT as their instructional technology in online course delivery. However Web CT is limited in some areas and the advisory committee feels that TextWeaver add-on discussion forum component meets the goals of the next wave of delivery vehicles, those that offer a more collaborative and student centered learning environment. Much of Ryerson's Image Arts programming is collaborative and using this type of instructional technology will keep this pedagogy at the forefront.

“TextWeaver is not a Web-based software, rather it is a client-side software like Outlook or Eudora. A user has to have it installed on the computer she would be working on.” (Xin, e-mail) TextWeaver does not replace Web CT, but uses a different “conferencing” component. Compared to the standard Web CT conferencing, TextWeaver software has improved design in four areas: reading and composing, message key wording and weaving, material storing and reusing, and working offline.

“TextWeaver is an environment for online discussion. It is designed to allow users to read, compose, organize and reuse discussion items and related files flexibly and interactively, both online and offline.” (Xin, 2002, p.3)

“The goals of the TextWeaver software are two-fold. The aim of the software is to make online discussion more convenient for teachers and students in some key areas. Users are able to respond to multiple messages, to quote from comments by others, to review the discussions using topics or keywords, and to re-use teaching materials. The second aim is to facilitate and encourage the technique called weaving.” (Xin, 2002, p.4)

The Image Arts program at Ryerson provides students with a very collaborative work environment. Students are encouraged to work in pairs or small groups in their studio courses and group critiques are conducted of student work. While at Ryerson students develop lifelong friendships, business partnerships and build creative networks. The TextWeaver discussion forum blends nicely with this.

The whole professional field of photography is collaborative whether working with assistants or lab managers, or whether testing new technological devices (such as digital cameras). The social group photographers rely on their network for information. Trim, et al, speak of the collaborative learning environment in more elaborate detail.

Learning is a social experience as much as it is a cognitive task. Deferring gratification to pursue long-term goals, such as degree completion, requires the student’s strong belief in their ability to sustain motivation and solve problems (Bandura et al., 1996; Zimmerman et al., 1992). Peer relationships play a key role in assisting students with developing and maintaining academic self-efficacy beliefs. Co-operative, open learning environments maintain a *continuous flow* of new information, interpretation and reinterpretation which are aimed at producing a result different from the traditional lecture environment: one we hope will give the students (and instructors) more opportunity to learn actively and engage in on-going discussion throughout their academic careers; discussion which can occur with out the barriers imposed by university calendars.

The TextWeaver software encourages photography students to *think* collaboratively and not just *work* collaboratively.

Main components of TextWeaver

The interface of TextWeaver contains three main components or panes: the Organizer, the Reader, and the Composer. The panes are all re-sizeable and collapsible.

The Organizer pane is where conferences are organized and their related keywords, files and materials are indexed and displayed. The main functions are the Keyword module with which the user can annotate the text with keywords while reading or composing messages. (Xin, 2002, p.4)

The Reader pane provides the user with multiple ways to sort and view the messages of a conference. Similar to an email interface like Outlook, the Reader has two sections: the message header and the message body. The messages can be sorted by date, author, keyword and topic.

The Composer pane, similar to WordPad, is where the user writes replies, new messages, or private notes. The messages can be written offline and sent to the queue where they can be sent the next time the user goes online.

Instead of replying to only one message at a time, users are able to reply to multiple messages easily. Users have access to all previously posted messages while composing a new message. This is in sharp contrast to Web CT conferencing where you lose what you were typing if you try to go back to another posting for reference.

Keywording allows users to classify the content into various categories for future reference. This is a time saving feature especially when trying to remember specific previous discussions. Keywording multiple passages allow the user to create hypertext stacks of related materials. This allows the users to re-visit sorted information for test review, paper writing and weaving discussions. This weaving feature is the key to collaborative learning. Users take related material from classmates and instructor and are able to synthesize them into summaries and build new concepts and ideas easier with keywords. Plus because all the information is available offline right on the users workstation, the search is faster than through an online database.

Drawbacks to the TextWeaver Technology

TextWeaver is not an “anywhere” technology. It is a client-side software. The user has to access the content from the same computer every time. This will make it harder for students who like to log-on on their lunch break while at work or for those students who don’t own their own computers and need to use a public library or Internet cafe. However TextWeaver has import and export functions and the files could be copied to a removable storage media for transport to different workstations.

TextWeaver is purely a text-based software. Multimedia is not currently supported nor is file attachment. Future updates of the software are planned to allow this.

Literature Review

There are currently no distance education courses offered in the Image Arts Program. They offer night classes through the Continuing Education department on the History of Photography. Providing an online version of this course would also allow future “true” distance students (or even those that could save a day of commuting) a chance to obtain a credit course in the Image Arts department.

The developers of the TextWeaver software under the direction of Dr. Andrew Feenberg (SDSU) and Cindy Xin (SFU) are currently testing the program under regular classroom conditions. Their evaluation methods include online transcript analysis, computer-generated usage data analysis, questionnaires and interview data analysis. The developers predict that they will obtain rich information about the teaching and learning process by data that is deposited in the online transcripts. "Computer generated usage data record individuals' interaction with the software: how frequently, how long and in what sequence they interact with the system." (Feenberg and Xin, 2002, p. 8)

Formal evaluation results are not yet available, as the testing has just been done this fall semester at different universities in the US. In a recent email from Cindy Xin she stated:

Data are being collected and have yet to be analyzed. However, the impression we have is that the students like the overall design, which resembles the email clients they are familiar with. They like the seminar creation feature, which allows them to organize their activities in different spaces. They frequently use the Copy Quote and Paste Quote functions, which enable users to copy passages from previous messages while composing a reply and links quotations to their original content.

The full evaluation results will be available in 2003.

Research Question

Are Ryerson's learning objectives for the History of Photography course attainable for students using Web CT with TextWeaver discussion forum instructional technology?

Research Objectives of the Pilot Test

1. To find out if Web CT, using TextWeaver discussion forum add-on software is able to deliver the course content effectively.
2. To find out if students use the unique features like weaving, keywording and offline access of the software effectively.
3. To find out if collaborative learning occurs among students.

Methods

Testing is concerned mainly with how users interact with the new TextWeaver discussion tools and how students engage with online delivery of the content for this particular course.

All of the research will be formative as the course is still under development. Future testing will be done on the Fall 2003 offering of the course.

Participants will be from the student demographic as well as two subject matter experts (SME's) from faculty who will be involved in the discussions to make first hand observations and be able to answer any questions the subjects have.

Participants will engage in the use of Web CT and TextWeaver software for a minimum of three hours per week for 4 weeks. The student subjects will be paid for their time spent on the project including interviews and focus groups, and will be given credit for a program elective. We have budgeted for eight student subjects – half of which are to be women to ensure data collected reflects the current Photographic Arts student body. We would like a minimum of six.

The participants will not complete the full History of Photography course during the four weeks and they will not be tested on their content retention. That will be saved for the classroom evaluations. However participants are expected to engage with the content and treat it as if it were “real”.

The methods used will be mainly qualitative. According to Weiss,

In the early development stages when a pilot demonstration of the program is being run, qualitative methods can provide formative information that will help practitioners craft the standard version. Once the final standard version is implemented, quantitative evaluation can be conducted. (Weiss, 1998, p. 268)

Usability testing using online transcript analysis and participant feedback will be the mainstay of the initial research plan. Online transcript analysis will examine the student's interaction with the TextWeaver software, show if they used the keywording and weaving functions, and show if they engaged in collaborative learning. Feedback will include interviewing and focus groups during and after the testing period. Focus groups will be divided between men and women. This is to ensure there is no dominating male among the women and to make them feel completely comfortable in expressing their feelings about the technology.

According to Reeves and Hedberg the data collected during usability testing “provides an improved basis for guiding the design and implementation of interactive learning systems”. (p. 160) Interview questions and focus groups can directly address information and attitudes about using the software in the learning environment.

A review of the TextWeaver software developers' methods was conducted and it was suggested that online transcript analysis provides rich information about the learning/teaching process and will give “valuable insights into individuals intellectual progress and group interaction” (Feenberg and Xin, p.8).

Potential Problems and Contingencies

At the stage of our involvement, the course content will have been programmed and ready to begin testing. However, we are building in some extra time in the preparation stage for the SME's to review the content before our participant testing begins. This will allow for any tweaking of the content and software, and will act as a pre-test of the beta version rollout.

There will be two faculty members participating in the discussions with students during the evaluation. They will be actively guiding the discussions as well as provide technical support should student subjects encounter any problems with the software or the content.

Dissemination Plan

The results of the evaluation will be presented to the Ryerson Image Arts advisory committee in May 2003. The results will be used to make a final decision on the implementation of the instructional technology in the History of Photography course in Fall 2003. The results of the recent American classroom evaluations done by Cindy Xin will also be presented.

The two faculty members involved in the trial will also present first hand impressions of using instructional technology to teach the course.

A comprehensive report will be presented with the main findings given up front as the audience will be the academic advisory committee. The committee is there to ensure the overall goals of the program are met. There will be no sugar coating of results, as the stakes are too high and the time frame for implementing the course too short. The report will address the four research objectives and summarize the findings in terms of the overall research question.

Recommendations will be given as well as a draft proposal for classroom testing of the instructional technology. Work needs to begin immediately on evaluation methods for the classroom testing. Pilot testing of student survey, interview, and focus group questions needs to be done over the summer months.

Proposed Timeline

November 2002 - Initialization of the project

- Send proposal to client
- Submit ethics application
- Draft interview and focus group questions
- Draft checklist of content to be reviewed by SME's
- Approval of the proposal by the Ryerson Image Arts advisory committee

December 2002 - February 2003 – Preparation

- Submit Evaluation Plan to Advisory committee
- Receive ethics approval
- Pilot test interview and focus group questions
- Revise and finalize interview and focus group questions
- Rollout pilot History of Photography course online
- Review of content by SME's - checklist
- Test all screens, buttons and menus - by developers and SME's
- Revise any errors to content or menus – extra programming time is built in here
- Gather eight test subjects from the student body of Image Arts

March - April 2003 - Implementation period

- Begin use of the Web CT with TextWeaver software in a sample course setting
- Conduct interviews half way through the testing period
- Conduct post observational focus group sessions – one for men, one for women
- Analyze transcripts

May 2003 - Reporting period

- Summarize findings
- Analyze and write report
- Present findings to Image Arts Program Department

Summary

The intension of this plan is to prepare the Department of Image Arts, at Ryerson University for a Fall 2003 rollout of their first credit course using instructional technology, on the subject of History of Photography.

Interview Questions

These interview questions are intended to gather feedback on the TextWeaver software, as it pertains to student's learning experience during the pilot course and their interaction with the technology. This interview is to be conducted about halfway through the testing session. This is to ensure initial feelings about the technology are not forgotten.

- 1. Did you experience any technical difficulties when launching the TextWeaver software and logging on to the course site? If yes, please explain.**
- 2. Were you able to download your discussion messages and course notes easily? If not, please explain.**
- 3. Did you experience any problems using the Organizer of TextWeaver? If yes, please explain.**
- 4. Did you understand how to use the Reader feature of TextWeaver? If not, please explain.**
- 5. Did you understand how to use the Composer feature of TextWeaver? If not, please explain.**
- 6. Were you able to keyword your discussions and notes easily? If not, please explain.**
- 7. Did you understand how to use the File Cabinet? If not, please explain.**
- 8. Were you able to use the *weaving* capabilities of TextWeaver? If yes, please elaborate on how you did this. If not, please explain any problems you had.**
- 9. Do you like using the TextWeaver software for class discussions? Why or why not?**
- 10. Do you believe TextWeaver discussions adequately take the place of face-to-face classroom discussions? Why or why not?**

Focus Group Questions

This focus group is intended to gather feedback on the TextWeaver software, specifically, the medium of instructional technology as it pertains to student's learning experiences during the course. The sessions will be conducted at the end of the 4-week pilot course implementation.

Please feel free to be open and honest during this discussion. All information gathered during this focus group will remain anonymous. We ask that you respect each other and keep what is said during this session confidential once you leave the room.

- 1. Do you find the TextWeaver software enhances your ability to learn?
Why or why not?**
- 2. What do you think are the benefits of using TextWeaver software?**
- 3. What aspects of the TextWeaver software could be improved? Why? or How?**
 - The Organizer
 - The Reader
 - The Composer
 - Keywording
 - Weaving of ideas
 - The File Cabinet
- 4. What do you like best about the TextWeaver software?**
- 5. What do you like least about the TextWeaver software?**
- 6. Do you see a need for an informal chat room in the TextWeaver course?
Why or why not?**
- 7. Do you prefer face-to-face or online discussions? Why?**
- 8. Do you feel more or less “connected” to your classmates in an online version of a course compared to how you feel in a traditional lecture setting?
Please elaborate.**

Online Transcript Analysis

After the pilot session is over the transcript data from each participant will be collected and studied. Investigators will be looking to see if the students used the keywording and weaving functions of TextWeaver in their discussions. By analyzing the text investigators will also be looking for evidence of collaborative learning in the discussions.

REFERENCES

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APPENDIX

Emails to and from the developers of TextWeaver, Andrew Feenberg and Cindy Xin.

1.

From: Marlene Hielema <mphielem@ucalgary.ca>
Date: Wed Dec 11, 2002 1:12:56 AM America/Edmonton
To: feenberg@sdsu.edu
Subject: TextWeaver

Hi Andrew,

Maria Bakardjieva at U of C suggested I contact you regarding some questions I have about TextWeaver. I heard you speak last month at the lunch meeting with grad students.

I'm a second year MCS student at U of C. I am currently taking an online course through U of A on Evaluating Instructional Technology with Stanley Varnhagen.

I am using the TextWeaver software in an evaluation plan I am preparing for that course. The idea is to create an evaluation plan on a fictitious course. I was going to use WebCT as my instructional technology, but the TextWeaver software sounds more interesting especially as it can be used off-line.

My "fictitious" online course is the History of Photography from Ryerson University's Image Arts program. The information students will get is very image based. Is TextWeaver a suitable product to deliver this type of content? Another option is to have a companion website or textbook for the visual content. My evaluation plan is intended to work out the "bugs" of the course and the delivery technology before a rollout of the full course occurs.

My initial ideas include formative and summative evaluations with focus groups, participant observation and individual interviews.

Do you have any preliminary evaluation results I can use in a lit review? I was unable to find any specifics on your web pages so far.

Also do students have to access the conferencing and discussions using the same workstation all the time? If they are able to work off-line then I am assuming the discussion files get downloaded to a workstation or server somewhere. If it is a remote server then they will have to remain connected. If they are working in different locations (like work, home or library) what are the provisions for this scenario. What if they don't have their own computer? Can the files and "reader" software be stored on removable media for use at another workstation?

I appreciate any answers to my many questions.

Regards,

Marlene Hielema

2.

From: feenberg@sdsu.edu
Date: Wed Dec 11, 2002 6:20:21 PM America/Edmonton
To: Marlene Hielema <mphielem@ucalgary.ca>
Cc: Cindy Xin <cindymxin@hotmail.com>
Subject: Re: TextWeaver

Your project sounds interesting. I've forwarded your message to Cindy Xin who can work with you on it. The main point to keep in mind is that TextWeaver is not a complete learning system because it handles only online discussion, not downloadable resources and email. But it is much better (we think) than the built in discussion boards in programs like Web CT. The idea is to use those programs for the presentation of materials and tw for discussion. Another important point has to

do with the fact that tw is not a web based discussion board running inside a browser. It is a desktop application. This makes it more powerful in some ways. Each user has a downloaded version of the whole discussion that can be modified in certain ways. Also the users can easily work both online and offline as they wish. But they do have to work from the same machine to get these facilities.

Imagemaven, course on photography, do I detect a photographer? I too am interested in photography. I don't recall if we talked about this. There's lots of my photos on my web page.

3.

From: "Cindy Xin" <cindymxin@hotmail.com>
Date: Fri Dec 13, 2002 12:01:22 PM America/Edmonton
To: <mphielem@ucalgary.ca>
Subject: Re: TextWeaver

Hi Marlene,

Andrew forwarded your message to me and asked to communicate with you. First, thanks for your interest in TextWeaver. Indeed, your project sounds interesting. However, there are a couple of challenges if you decide to use TextWeaver.

First, TW is mainly a text-based discussion software. The current version of TW does not fully support multimedia messages. One can incorporate images into one's message, however, it is rather convoluted. We cannot ask common end users to practice it. Supporting multimedia messages is in our plan for future release. Right now we are working on implementing file attachment. If things go well, we will include the function in our next release.

Second, TW is not a Web-based software, rather it is a client-side software, like Outlook or Eudora. It means that a user has to have it installed on the computer she would use at home, work or library. If a user does not have his own computer, he has to rely on computers that have TW installed.

Because it is a client-side application, there is the issue associated with coordinating one's work at different locations. TW has export and import functions. It allows a user to export the complete content of a course to a user specified location, such as a portable storage device (e.g., floppy disk) or a network location where the user can remotely access. It then allows a user to import the exported content into TW at a different location. This way TW allows a user to synchronize his work on different computers.

Right now, we do not have formal evaluation results. We have several courses running using TW at different universities in the States this semester. The courses are coming to the end. Data are being collected and yet to be analyzed. However,

the impression we have is that the students like the overall design which resembles the email-clients they are familiar with, such as Outlook or Eudora. They like the seminar creation feature which allows them to organize their activities in different spaces. They frequently use the Copy Quote and Paste Quote functions which enables users to copy passages from previous messages while composing a reply and links the quotations to their original context.

I hope this answers your questions. Feel free to contact me if you have more.

Cindy

4.

From: mphielem@ucalgary.ca

Date: Fri Dec 13, 2002 1:54:51 PM America/Edmonton

To: Cindy Xin <cindymxin@hotmail.com>

Subject: Re: TextWeaver

Hello Cindy,

Thank you so much for the information on TextWeaver! You answered all my questions. I'm looking forward to seeing your evaluation results next semester sometime. I'll keep an eye on the TextWeaver web site for them.

Happy Holidays,

Marlene Hielema