2005

Perceptions of Effective Web-Based Design for Secondary School Students: A Narrative Analysis of Previously Collected Data

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Abstract – In this article, I present the findings of a study on the perception of course developers and electronic teachers on the characteristics of effective web-based design for secondary school students. Through interviews, the perceptions of these participants on the use of various web-based components, how to incorporate sound instructional strategies into the web-based material, and the effectiveness of both the asynchronous web-based content and the synchronous delivery of that content are investigated in a virtual high school context.

Introduction

In September of 1988, the Newfoundland and Labrador Department of Education implemented a program of distance education for rural high school students. The main purpose of this initiative was to provide access for students in small schools to secondary level courses that were important for post-secondary admission but were difficult to offer in rural schools due to low levels of student enrolment. Over the next decade, this program would grow from the initial Advanced Mathematics 1201 course to include eleven different courses with almost 900 rural students (Brown, Sheppard, and Stevens, 2000).
This same period would also see advances in information and communications technologies, with various distance education programs in Newfoundland and Labrador keeping pace with the introduction of asynchronous and synchronous web-based distance education. These web-based programs led to the recommendations of the Ministerial Panel, which called for the creation of a new virtual high school for the province (Sparkes and Williams, 2000, p. 65). In 2001-02 the Centre for Distance Learning and Innovation (CDLI) began its implementation year with ten courses being piloted in the ten school districts. The courses themselves were primarily text-based with some images. Only a select few of the courses contained any multimedia or audio components. After the pilot phase the CDLI began to expand its course offerings, where at present it offers twenty-seven different courses, with another eleven courses currently in development.

**Research Design**

In this qualitative interview study, I considered the characteristics of effective web-based design for secondary school students within the CLDI based upon the perceptions of teachers and course developers. The data collection process involved one 30-60 minute telephone interview with each individual from May 2004 to September 2005. To secure research participants, I e-mailed twenty-four e-teachers (eight of which were also developers) and four course developers (four
others were not contacted; three having retired from teaching and the fourth's e-mail address is unknown). Five of these individuals agreed to participate: three course developers and two individuals who were both course developers and e-teachers.

John was one of the original developers and was perceived as one of the stronger course developers until accepting a new job with the understanding he would not seek to be seconded by the CDLI. Norman, one of four original developers who went on to be an e-teacher, has also developed sections of two other courses and is teaching a second web-based course. Bill, about to begin his thirtieth year of teaching this September, is another of the initial developers with the organization for the past three years as an e-teacher.

Cliff spent twenty-nine years in the classroom before retiring, during which time he also spent about a decade on the provincial Government's curriculum committee creating the course outcomes for new curriculum, textbook, and course materials selection for his subject area. He is in the process of designing his first course for the CDLI. Also developing his first course, Sam is a principal of a small, rural school, where he has taught in almost every subject area at every grade level, even though he is trained as a Science teacher. Prior to becoming involved with the CDLI, he had been active in distance education, both as a school-based supervisor of distance education students and a teacher in the former TETRA/Tele-medicine system.
In addition, there was also an administrator with the CDLI interviewed. George has been involved in distance education in the province of Newfoundland and Labrador for the past decade and a half; first as a distance education coordinator in a rural school, then as an instructor and content developer, and later with a web-based program; making him a natural choice to fill one of the administrative positions in the CDLI.

**Methodology**

After having analyzed the data using the constant comparative method, a form of inductive analysis (see Barbour 2005a; Barbour2005b), I was open to alternative methods of data analysis that might confirm, deny, or add to the insights that I had already gained. According to the National Science Foundation, “qualitative researchers tend to gravitate to the study of phenomena that are undertheorized or outside of the scope of existing theory. This attraction derives in part from a concern for the inadequacy of existing theory, but also from a desire to advance new theories and an interest in critically evaluating the tenets or assumptions of widely held explanations” (Ragin, Nagel, and White, 2004, p. 11). However, Kramp (2004) argues that “as a qualitative research method, narrative inquiry serves the researcher who wishes to understand a phenomenon or an experience rather than to formulate a logical or scientific explanation” (p. 104).

Further in their own outline of the scientific foundations of qualitative research,
Ragin, Nagel, and White (2004) suggest that one of the techniques that can be used to accomplish this advancement of new theories or critical evaluation is narrative analysis because it “offers an important way to gain a more holistic view” (p. 14). Supporting this belief, Cortazzi (2001) states that narrative analysis is useful for “systematic interpretations of others’ interpretations of events” (p. 384). Narrative analysis is also useful because “it emphasises that the nature of an event or belief is not to be fund in the event or belief itself, but in the relationship of the event or belief to a broader interpretive framework” (Ezzy, 2002, p. 95). As Shank (2002) suggests “stories are about meaning, and qualitative research is a systematic empirical inquiry into meaning” (p. 147).

In addition, Kramp (2004) suggests that “narrative inquiry assumes ‘personal involvement’ as the very condition that makes it possible for you, as researcher, to gather and interpret narratives of participants in your study” (p. 114). This is supported by Marshall and Rossman (1999), who suggest that narrative analysis “requires a great deal of openness and trust between participant and researcher” (p. 122). As a former teacher in Newfoundland and Labrador and having been involved with the CDLI during that time, I knew and was known by all but one of the participants. As such, I accepted these suggestions that a narrative analysis of the interview transcripts may offer a more complete or at least different view of the data.

**Findings**
Czarniawska (2002) suggests that there is no one way to conduct a narrative analysis, so I selected the Labov model (see Labov, 1972, pp. 362-370) as a way of organizing a series of narratives from the six interviews. The following are excerpts of some of the narratives from each of these six participants, outlined using the Labov model. In most instances, I have selected stories that are representative of the types of stories that were common among the participants.

The first story that I have selected comes from the interview that I conducted with John.

**Table 1 – Problem of keeping students' attention when using primarily text**

<table>
<thead>
<tr>
<th>Abstract</th>
<th>Interviewer: Okay. Umm, thinking along the same framework, umm, things you've seen developed, reviewed, can you give an example of, of what you think was something you have seen that's a really ineffective lesson? Things that if you could change you would?</th>
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<tbody>
<tr>
<td>Orientation</td>
<td>Interviewee: Ineffective lessons, <em>(pause ~ 1 second)</em> and I, I know that there is some there for me for 1204. Some lessons that were ineffective were ones where students had to do investigations and, umm, I pretty much said to them “Well, <em>(pause ~ 1 second)</em> it's explained well in your book, so go, go to the book and do it.”</td>
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</table>
| Complication | Interviewee: I don't know how effective that would be, I think you're, you're just telling the student that, ahh, yah, the book is fine here, go to it. I don't quite think that students got much out of those lessons and I would assume for the most part, ahh, they were probably skipped. Umm, *(pause ~ 1 second)* umm, something else that I, I have found to be, ahh, *(pause ~ 1 second)* ineffective, *(pause ~ 2 seconds)* umm, let me think, umm, I find a lot of the, like the, there does tend to be a lot of, of text on these sites and this comes true in,
The issue of students' use and interest in text-based material was a common theme in each of the interview transcripts, as almost all six participants talked about the lack of motivation provided by streams and streams of textbook-like content simply being placed in a web format. This theme is clearly illustrated in the story as it is told by John, where he describes the students getting bored with only textual information and suggested that interactivity or anything that can make it more than just a textbook on the web.

This theme of the perceived frustration that students have when they encounter text as a part of their web-based content is also illustrated in this story from Norman's transcript.

Table 2 – Using visuals in place of text
**Abstract**

*Interviewer: Okay. (pause ~ 5 seconds) Alright. Umm, thinking about yourself as a, as a course developer. When you're developing a lesson, what are the things that are in the back of your mind, in terms of I want to make sure that I have these things in (pause ~ 2 seconds) pretty much everything I design because I know that they're useful to the students?*

*Interviewee: [O.C. The interviewee begins the response in a definitive manner] Definitely, ah, visuals*

**Orientation**

*Interviewee: umm, I think that, ah, by providing students a visual cue with the written information it does provide a connection for them, (pause ~ 1 second) and, obviously those visual cues should be representative of the text-based material. (pause ~ 1 second) And, then, as I'm going down through,*

**Complication**

*Interviewee: I'm not trying to re-write a text, ah, rather what I'm trying to do is I'm trying to draw them, ahh, to understand or to lead [O.C. The interviewee stresses the word 'lead'] them to an understanding of certain content, whether it be through real-life examples, ah, or, er, maybe setting up a scenario whereby then they would follow through with that scenario to, ah, to develop an understanding of a concept.*

**Evaluation**

*Interviewee: Various things that can be down there, er, but visuals are, are in my mind something very simplistic and something that is very easy to incorporate, but yet, ah, it does provide a connection there between the, the written text, and then of course the, the, that, that visual. Also, video clips, anything that's interactive, things that are, especially in the two courses that I'm teaching with the, ah, economics, (pause ~ 1 second) there's got to be a lot of real-world examples. So, I do provide a lot of external links, whereby students can actually go out and actually see what's happening, ah, with regards to those specific contents whether it be something in, in the marketplace, ah, whether it be through business development, looking at case studies enter, of entrepreneurs, and what they have gone through, ah, for example, challenges [O.C. The interviewee stresses the word 'challenges'] (pause ~ 1 second) is one of the concepts, ah, that is looked at with regards to developing a business and what do entrepreneurs have to overcome in order to be successful.*

**Result**

*Interviewee: And by providing students with real-life*
In this story, Norman also identifies the students' lack of interest in reading text online as a complication. In the evaluation portion of his story, however, Norman begins to describe a way to deal with this complication to make the web-based content more useful to students. In addition, Norman also describes other strategies that can be used by course developers to make the material more than just a textbook on the web. He indicates that video clips and the use of external links to expand the information available to a student from a single source.

This concept of providing insight into how the web-based content could be designed in a way that would make it more interesting for the students was something that four of the six participants described in narratives. Table 3 provides one such example from John's transcript.

**Table 3 – Building in interactivity in place of text**

| Abstract | Interviewer: Okay. Umm, think about the, the, the distance education materials, you know the courses that, that you've created, that you've reviewed, that you've seen, can you describe what you think is, is one example of something that you’ve seen that you think is a really good example of something that would be really effective for the students? |
| Orientation | Interviewee: Ahh, there was this one in the physics course I saw where students were given, ahh, a Flash demo, and it had to do with, *(pause ~ 1 second)* I can't remember exactly the lesson, it had to do with force and momentum I do believe and what they were talking about was crumple zones in cars and *(pause ~ 1 second)* in the interactive demo they had two cars, and |
one was like a 1960 car, which was made primarily of steel and other was a, a new car made primarily of plastic and of course and as we all know, new cars have what we call crumple zones on them.

<table>
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<tr>
<th>Complication</th>
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| Interviewee: So what happens is you, you, in this Flash demo you end up crashing both cars *(pause ~ 2 seconds)* and of course the one without the crumple zone, the 1960 car, I mean there is hardly any damage done to the car and in the new car, the one with the crumple zone, the car almost demolished, even though both are sent in at the same speed.

*Interviewee:* However, when you put a passenger in the car, the one that has no a crumple zone the driver takes all of the force and he goes flying, where the one with the crumple zone the force is, is is deflected a lot into the car, so the driver doesn't get as much force.

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<th>Evaluation</th>
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<td>Interviewee: I remember watching and saying I, I could see, you know, how students could really learn from this cause it was something that was directly related to the curriculum, it was showing them exactly how it works and...<em>[O.C. School's public announce system begins to play in the background.]</em> Hold on a sec please...*[O.C. School's public announce system finishes playing.] And it was, you know, it was showing them something that unless they, that would be very hard to demonstrate in the classroom</td>
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<tr>
<th>Result</th>
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<tr>
<td>Interviewee: ahh, I've seen similar things tried to be done with, ahh, oh I can't remember, those, ahh, air cars, but it, it never really worked quite as well. Very, very well done</td>
</tr>
</tbody>
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<tr>
<th>Coda</th>
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In this narrative, John describes the use of a Flash demonstration that was both interactive and something that would not be available to the students outside of a simulated environment.

Sam provides another example of how to make the asynchronous content more interesting to the students in one of his narratives.
Table 4 – Building in interactivity in place of text

| Abstract | *Interviewer:* Thinking about the stuff that you've developed so far and for that matter the stuff that you've seen in the existing course, um, think about one lesson that you can think of that would, or you think is really effective with the students.  
*Interviewee:* Ah, okay, pause, okay, and your questions is.  
*Interviewer:* Describe it to me. |
| --- | --- |
| Orientation | *Interviewee:* Okay describe it, well there's one lesson I did which involved the process of digestion, now again I'm surmising that it would be effective but obviously there's no student has taken it as of yet. So, this is new material in fact this will be the first time this course is available through CDLI.  
*Interviewee:* So again, so it's only my assumption that it will be effective, I think it will be, but again with all teachers, when the students actually take it I maybe wrong. I mean lord knows I've been wrong before and I'll be wrong in the future but, the thing about this lesson in particular, what I've done with this one is looking at the digestive system and the process of digestion there is a QuickTime video in there that summarizes the whole process. |
| Complication | *Interviewee:* I think that's very important, students can obtain a lot of information from the video, obviously its much more interesting for a student to see an interactive video which is moving with color flashing and sound on the screen then it is reading about it, and I certainly believe that the more interaction the student has the better it will be.  
*Interviewee:* Ah, this lesson again like I said incorporates that QuickTime video built in to it, there is a description of digestion which is again the same process but explained slightly different with a little different slant, ah and again I think that's a big thing there, in fact I would think that lesson itself will be, well done and well received. in terms of the activity section, there is a couple of worksheets that I have built in for them to download, print and work through, and again in going through the test yourself question, again all this is done based on the assumption that the students will actually do the material, I mean but that as you know from teaching, you can't always guarantee that. |
| Evaluation | *Interviewee:* But I feel fairly confident that if a student works through that lesson as intended it be done, they should come away with a very strong understanding of that process. |
In this narrative, Sam describes how he used a video to describe a specific process to the student. This video provided an audio description, along with accompanying images to further illustrate the process. The use of this video was supplemented by traditional notes and student activities that the students can elect to use in addition to or in place of the video. This use of multiple ways to deliver the information provides students with choice as to how they will access the information, with the hope that they will use as much of it as they need in order to understand the process. Similar ideas about using interactivity were also described in narratives from Norman's and George's transcripts.

Another way to keep students' interested in the web-based content was outlined in this narrative from Norman's transcript.

Table 5 – Making the content personally relevant to keep students' interest

| Abstract | Interviewee: To draw them in more, umm, (pause ~ 2 seconds) I'm of the mind, I guess Mike, that, ahh, I don't think that everything needs to be flashy, [O.C. The interviewee stresses the word "flashy"] if the student want to learn, if you provide the information, and you prov, you provide it in a, in a fairly [O.C. The interviewee stresses the word "fairly"] interesting way, now I don't mean all text-based. (pause ~ 1 second) But if you do provide it in a fairly interesting way and provide some motivation, (pause ~ 2 seconds) then, ahh, you know, they'll usually take it upon themselves to, to move ahead with it. |
| Orientation | Interviewer: Okay. Can you describe to me what you think would be a fairly interesting way then? (pause ~ 2 seconds) Cause you said not sort of flashy, with all I guess the bells and whistles, but you said not text-based. (pause ~ 4 seconds) Interviewee: Yeah... |
Interviewer: Can describe what it would look like? (As interviewee says - For example...)

Interviewee: Yeah, sure. Like, if you're looking at the development of, ahh, okay, say in the biology for example, (pause ~ 2 seconds) talking about, ah, biomass and talking about food webs and, ahh, things like that.

Complication

Interviewee: Sure, you can simply provide them and say "Okay, you know, this organism, ah, sits at this level in the pyramid, ahh, you know this is where most of the biomass is." and, you know, you can show the structure itself.

Complication

Interviewee: Now, most students can get that from a text (pause ~ 1 second) and, ah, they see the images and so on there,

Evaluation

Interviewee: [O.C. The interviewee's speech begins to speed up, as if he is more excited or interested] but if you can provide them with something a little more sustentative and relate to where they are. (pause ~ 1 second) So, if for example, ah, if it's a Newfound, a student in Newfoundland and Labrador, you would use organism that would reside in the province themselves and provide that structure and then with that structure you could also provide examples of, say the amount. [O.C. The interviewee's speech returns to normal] So, if you're looking at, ah, the actual biomass, at the lower levels we know that of course, that you've going to have mostly your herbivores and things like that, that are, that are, you know, basically eating up the vegetation and these sorts of things. (pause ~ 2 seconds) As you move up the, the food chain, ahh, then you're going to have, you know, your tertiary, your higher order organisms that are going to be feeding on lower order organisms, but the amount of the biomass obviously is going to be decreasing as you go up the pyramid. So, what you could do is you could simply just provide them with a visual showing that as you move up the pyramid, the amount of, ahh, biomass that's there is going to be decreasing as you go through. So, it can be something as simple as that (pause ~ 2 seconds) and it would, you know, I guess, guess basically build upon, one upon the other.

Interviewer: Okay. So, it's not so much. (pause ~ 2 seconds) umm, how you present the content, it's more the type of content you present, trying to make things local to the student?

Interviewee: Yeah, it, I, I think it's, it's a, a combination of a number of things. But I, I think that trying to be too flashy, ahh,
really may [O.C. The interviewee’s speech slows down in a deliberate manner] distract actually from the lesson itself (pause – 1 second) and students may miss the message by, (pause – 1 second) you know, simply just because they want to look at this or hear something, [O.C. The interviewee’s speech returns to normal] ahh, or look at a particular video clip or, you know, move something around, you know, as fast as they can to see a car moving or, or, whatever.

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<th>Result Coda</th>
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<tbody>
<tr>
<td>Interviewee: Ahh, all those things are great, but I think that there is certainly a balance there that should be, you know, looked at, right.</td>
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</table>

In addition to using various devices that are offered by the technology to engage students, Norman suggests in this narrative that by providing material that is familiar to the students. A focus on content that is locally sensitive to the context of the students' lives allows the students to make individual connections to content that touches them, making it personally relevant. By making the content personally relevant, it becomes easier for the students to understand and incorporate that content.

Bill also relates a narrative of his own that describes how in the course he designed he tried to provide the students with opportunities to personal the material themselves.

Table 6 – Making the content personally relevant to keep students' interest

<table>
<thead>
<tr>
<th>Abstract</th>
<th>Interviewer: in dealing with the, the selection of topics, you mention that the familiarity with the, the, the topic was important. Umm, is that something that you, ah, ah, tried to include in, in, in your writing topics</th>
</tr>
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<tbody>
<tr>
<td>Orientation</td>
<td>Interviewer: That they would (pause – 1 second) know things about, things that they would have personal connections to? Interviewee: Yah, yah.</td>
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</tbody>
</table>


In this narrative, Bill describes a process that he includes in his courses to have students looking inward. This process is designed to achieve the same goals that the local content described in Norman's narrative, that is to allow the students to make the content personally relevant to them and give the a better opportunity to remember that content.

Along a different theme, Cliff's narrative discusses how he feels courses should be designed for students based upon their ability levels.

Table 7 – Designing for the average and below average student
<table>
<thead>
<tr>
<th>Abstract</th>
<th>Interviewer: As you're designing your, your, your courses or your course sorry, as you're designing the lessons in there, what’s the one thing in, that you’re keeping in mind for your own course, that you're trying to put into every lesson?</th>
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<tr>
<td>Orientation</td>
<td>Interviewee: Umm, (pause – 3 seconds) the idea that, umm, (pause – 2 seconds) umm, the students are still students (pause – 1 second) and, umm, and we shouldn't assume that they're all self motivated</td>
</tr>
<tr>
<td>Complication</td>
<td>Interviewee: Therefore, umm, using some of the traditional ways of making sure that they are doing what they're supposed to be doing</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Interviewee: And it's much better to shoot, I think, for the average and below average student and, (pause – 1 second) umm, having enrichment for the brighter ones, the self-motivated ones, but making sure that the average, the below average student is</td>
</tr>
<tr>
<td>Result Coda</td>
<td>Interviewee: There’s a structure in place that guarantees they're doing their f--king work.</td>
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</table>

The basic theme behind Cliff's narrative is that the students of above average ability will find a way to be successful in the course regardless of how it is designed. However, students who are of average ability or below average ability tend not to possess the skills that will allow them to achieve success in any situation. Therefore it is important that course developers design their courses so that these students will be able to succeed. In this narrative, Cliff was probably the most direct when it came to the type of student that the web-based content needed to be designed for, although this theme was also discussed by John, Norman, and Sam.

Continuing the planning theme, a narrative from George's transcript also describes an aspect of planning important for course developers to consider when getting ready to design their courses.
### Abstract

*Interviewer:* If you were, had to give a developer, new developer that was coming online, just one piece of advice about designing web-based lessons for high school students, what would it be?

### Orientation

*Interviewee:* Ah, Mike, you've just asked the easiest question I've ever had asked of me *(interviewer laughs)* because I can give a definite answer on that. *(pause ~ 3 seconds)* It is this, *O.C. Interviewee speaks in a very deliberate manner* do not attempt to write anything, do not attempt to construct anything, until you have designed your project out from end to end, from start to finish...

*Interviewee:* Don't construct a single item until you have designed your learning resource project out end to end, from start to finish. So you have to now the entire scope and sequence of what you plan to do before you do any portion of it. *O.C. Interviewee returns to normal speech pattern* Ah, we found this time and time again, umm, *(pause ~ 2 seconds)* we've been pushing this pretty, pretty much since the get go and, ah, we found *(pause ~ 3 seconds)* every time, every project that we've done affirms this as being good guidance.

### Complication

*Interviewee:* Look if you fail to do this, here's what happens. The, the instructor, I'm sorry, the instructional designer, er, or I should say this, the content developer wants nothing other than to get in there and get on with it. *(pause ~ 2 seconds)* The problem is, is that for the web, if you get in there and get on with it and make a misstep, you know, miss something important, undoing that mistake usually means changes that speculate right through the web of work that you've constructed. So, undoing you're mistakes is horrendously *O.C. Interviewee stresses the word "horrendously"* difficult.

### Evaluation

*Interviewee:* Second thing is that when you take the time to lay your project out from start to finish, the chances are you will confer with other people and that means that you will add layers *O.C. Interviewee stresses the word "layers"* of, of important content, layers of important, umm, *(pause ~ 2 seconds)* modifications *O.C. Interviewee stresses the word "modifications"* and alternatives to your project that would not otherwise have been there if you did not take the time. Now of course, last of all, from a time management perspective it makes a hundred percent sense, *(pause ~ 1 second)* you know, ah, before a project is started, ah, both me who's job is it to manage these projects and then the instructional designer
who's job it is to do it, (pause – 1 second) know the ground rules.

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<tr>
<th>Result</th>
<th>Interviewee: So, I know what to expect, (pause – 1 second) the developer [O.C. Interviewee stresses the word “developer”] knows what to expect. And Mike (pause – 1 second) I could not emphasize that point too much and you can see my point.</th>
</tr>
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</table>

In this narrative, George emphasizes the importance of planning prior to the beginning of the development process. While planning was an indirect theme that was common during the interviews from each of the five individuals that had actually developed courses, the CDLI administrator George was the only individual who described the planning process as a narrative that I was able to fit into the Labov model.

**Discussion**

While narrative analysis was an alternative method in which to analyze the data generated from this study, it may not have been the most suitable. In describing the type of interview questions that she utilized, Kramp (2004) states “my interview prompt – ‘Tell me about a time you were aware of your students' stories of learning’ – was an invitation to each participant to construct a narrative detailing the particularities of this experience and contextualizing them in a specific time and place” (p. 114). Given the fact that this study was not designed with narrative analysis in mind from the beginning, many of the question prompts from my own interview protocol were not conducive to or limited the participants' ability to tell their own narratives. In many instances, it was the question prompt itself that formed the abstract portion (and one some cases the orientation portion as well) of
the Labov model. In other instances, the questions allowed the participants to
describe hypothetical stories, which due to the fact that they hadn't occurred would
not contain a result or coda portion of the Labov model.

The two question prompts that appeared to have the most success with generating
stories that would fit into the Labov model were: “Describe a web-based lesson
you feel that was particularly effective?” and “Describe a web-based lesson you
feel that was particularly ineffective?” It was from these two prompts that the
detailed examples provided by Norman and John in Tables 1, 2, 3 and 4 emerged.
However, possibly due to the nature of the questions as well as perhaps the nature
of the participants, the responses of Bill, Cliff and Sam were particularly difficult
to fit into the Labov model because of their choppy speech and non-linear
discussion of ideas.

However, during the process of analyzing the data using a form of inductive
analysis, I was able to generate seven guidelines for courses developers to follow.
These were “when designing web-based content for secondary school students,
course developers should:

prior to beginning development of any of the web-based material, plan out the
course with ideas for the individual lessons and specific items that they would
like to include;
keep the navigation simple and to a minimum, but don’t present the material the
same way in every lesson;
provide a summary of the content from the required readings or the synchronous
lesson and include examples that are personalized to the students’ own context;
ensure students are given clear instructions and model expectations of the style and
level that will be required for student work;
refrain from using too much text and consider the use of visuals to replace or supplement text when applicable; only use multimedia that will enhance the content and not simply because it is available; and develop their content for the average or below average student." (Barbour, 2005b)

In the narratives that have been outlined, there is a great deal of fidelity between the themes of their stories and this list of seven guidelines. For example, George's story in Table 8 provides us with a great deal of description and rationale for the inclusion of the first guideline.

Another example would be how the learning object described in Norman's narrative outlined in Table 5 is an example of the third guideline. The notion of taking a concept from science, such as biomass, and simply using examples of insects and animals that the students would be familiar with to assist in both their understanding and interest in the web-based content. Bill's narrative in Table 6 about the using events from their own lives or their own communities as a writing prompt is an example how to design activities for the students to complete as a part of their web-based content that is in line with the third developer guideline.

Mentioned by just about every participant, and illustrated in John's (Table 1) and Norman's (Table 2) narratives above, is the fifth developer guideline. The fact that students' tend not to spend a lot of time reading text-heavy web-based content was a theme that was generated from the inductive analysis. However, John's definite comments regarding the fact that it is just as well to give a student a textbook if all the web-based content includes is text and more text were not
reflected in themes that were generated by the inductive analysis. Nor was the logical progression of alternatives to using text that Norman presented in his narrative.

The narratives from John (Table 3) and Sam (Table 4) are similar illustrative examples of the sixth guideline: only use multimedia that will enhance the content and not simply because it is available. In John's story, he describes how a simply learning object created with the software program Flash could provide the students with an experiential learning instance that simply couldn't be accomplished in a text only environment. Sam's story, on the other hand, describes a specific example of how he was able to use a QuickTime movie to get across information to the students instead of subjecting them to additional amounts of text-based information.

The final narrative outlined above was from Cliff (Table 7). In this story, Cliff is quite blunt in expressing his opinion on which groups of students he should be targeting as he designs the web-based content for his course. The specific target groups that Cliff references in this narrative are in line with the final of the seven guidelines for course developers. Finally, it is interesting to note that I was unable to locate any narrative that would fit the Labov model which corresponded with the second or fourth guidelines that were generated through the inductive analysis of the same data.
Conclusions

The narrative analysis that was undertaken generated stories that had a great deal of fidelity with the thematic guidelines that had been generated through the inductive analysis. What this narrative analysis has added to this particular study is a more complete view of some of the developer guidelines. In addition, “understanding that each story has a point of view that will differ, depending on who is telling the story” (Kramp, 2004, 108) allows for a variety of examples from the various developers' experiences in their different subject areas. In particular, these examples from many of the stories provided specific examples in which future practitioners can use to base their own interpretations of the guidelines.

As discussed in the previous section, a serious limitation of this analysis is the fact that the study was not designed with the use of this methodology in mind. Specifically, the questions that formed the semi-structured interview protocol were not designed to allow the participants to tell stories from their course development experience. Instead, these questions were largely designed to allow the participants to express opinions and insights that they had gained from their experiences, which for the most part did not lend themselves to the narrative model selected.

On a personal note, although this analysis only revealed a richer description of five of the seven guidelines that had been generated using the inductive analysis, as Shank (2002) reminds us, “it is important to use research to understand the nature of research [and] it is equally important to keep in mind that our growing
understanding of narrative can be used to expand our understand of the research process" (p. 157). As a relatively novice qualitative researcher, this desire to consider the data in an alternative way provided me with an opportunity to utilize a method of qualitative analysis that I would probably not have used in other circumstances. The opportunity has also afforded me the opportunity to see the importance that stories can serve in providing richer descriptions of themes generated from the data.

References


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